240

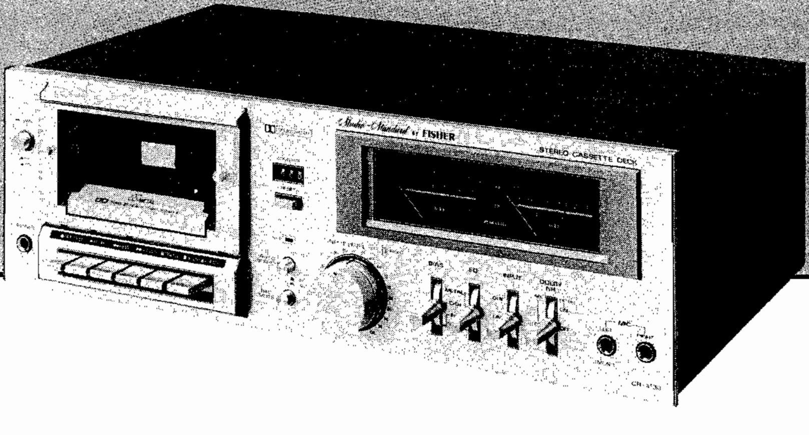
SERVICE MANUAL

FISHER

CR-4130

Two kinds (Black and Silver) of Front Panels including Knobs are used in CR-4130. As they are classified in Exploded Views and Parts Lists, please refer to them.

Stereo Cassette Tape Deck


FISHER
STEREO CASSETTE DECK
CR-4130

THE FIRST NAME IN HIGH FIDELITY

240

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SPECIFICATIONS

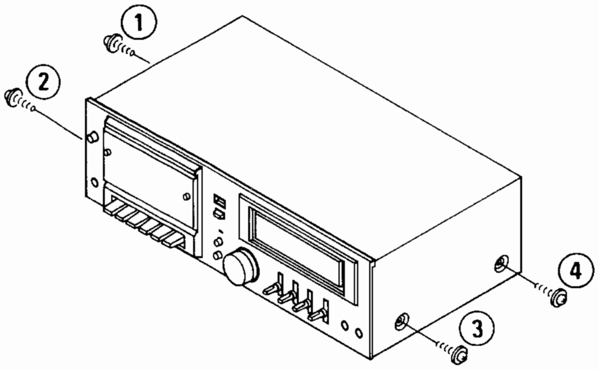
Power Source	AC 120/220V (50/60Hz)
Power Consumption	17W
Recording System	AC Bias
Erasing System	AC Erasing
Tape Speed	1-7/8ips. ±1.5%
Wow & Flutter	0.05% WRMS
Torque	
Playback	35 - 50g-cm
Fast Forward	55 - 90g-cm
Rewind	55 - 90g-cm
Fast Forward Time	110sec. (C-60 cassette)
Rewind Time	110sec. (C-60 cassette)
Frequency Response (Overall, DOLBY : OFF)	
Fe_2O_3 (7dB band)	30 - 14kHz
FeCr (7dB band)	30 - 16kHz
CrO_2 (7dB band)	30 - 18kHz
Metal (7dB band)	30 - 20kHz
Signal to Noise Ratio (According to CCIR method: Weighted, DOLBY : ON)	
Fe_2O_3	60dB
FeCr	61dB
CrO_2	61dB
Metal	62dB
Signal to Noise Ratio (According to CCIR method: Weighted, DOLBY : OFF)	
Fe_2O_3	52dB
FeCr	53dB
CrO_2	53dB
Metal	54dB
Erase Ratio (Overall)	
Fe_2O_3	70dB
FeCr	70dB
CrO_2	65dB
Metal	65dB
Crosstalk (with Fe_2O_3)	
Track to Track	70dB
Channel Separation (with Fe_2O_3)	40dB
Harmonic Distortion (K3)	
Fe_2O_3	1.0%
FeCr	1.0%
CrO_2	1.5%
Metal	1.5%
Input Sensitivity and Impedance	
Microphone	1.0mV/10k-ohm
LINE IN	100mV/62k-ohm
DIN INPUT	1.0mV/10k-ohm
Output Level and Impedance	
LINE OUT	560mV/2k-ohm (47k-ohm load)
DIN OUTPUT	560mV/2k-ohm (470k-ohm load)
Headphone	30mV/180 ohm (8 ohm load)
Oscillation Frequency	105kHz
Dimensions (W x H x D)	440 x 132 x 240mm
Weight	6kg

—Specifications subject to change without notice.—

DISASSEMBLY INSTRUCTIONS

COVER REMOVAL

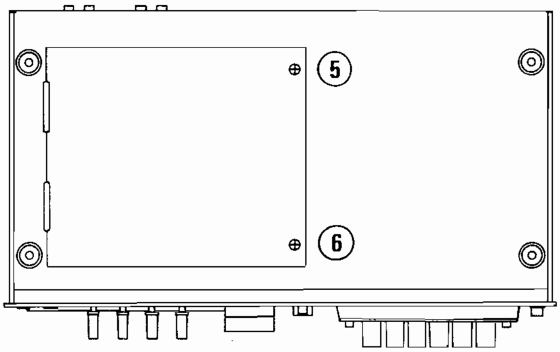
1. Remove the four screws (1 – 4) fastening the Cover.



2. Remove the Cover by lifting it.
3. Reassemble in reverse order.

SHEET PANEL REMOVAL

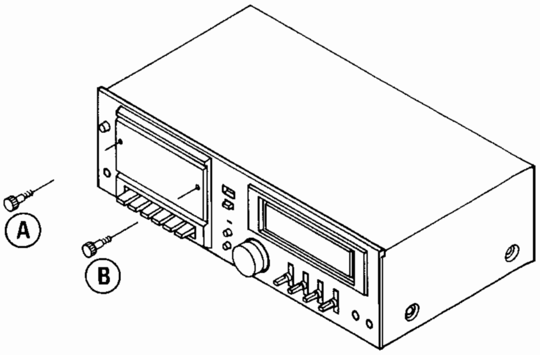
1. Turn unit over onto a clean soft surface.
2. Remove the two screws (5 and 6) fastening the Sheet Panel and detach the Sheet Panel from the unit.



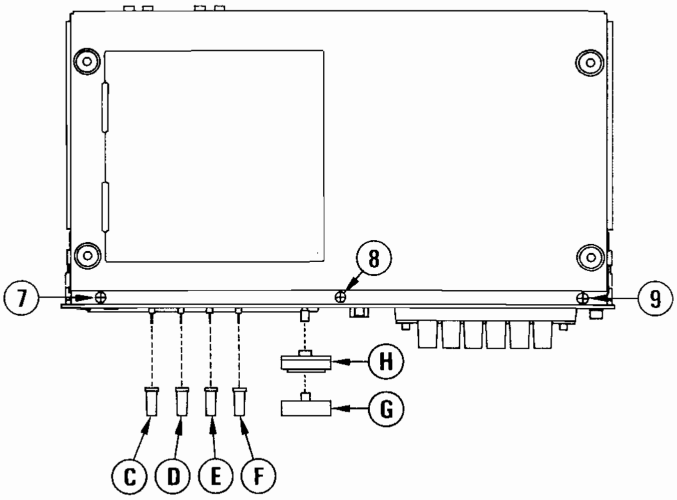
3. Reassemble in reverse order.

FRONT PANEL REMOVAL

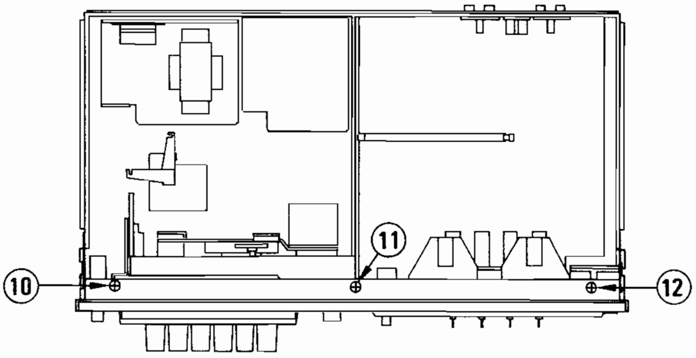
1. Remove the Cover by following the instructions for it.
2. Open the cassette compartment lid by pressing the STOP/EJECT button and take out the cassette tape from the cassette compartment. Detach the Window and the cassette compartment lid panel by removing the two Dress screws (A and B). Then, close the cassette compartment



3. Turn the unit over and pull out the four Switch Knobs (C – F) and the Input Level Control Knobs (G and H) from the unit.
4. Remove the three screws (7 – 9) fastening the lower side of the Front Panel and turn the unit in an upright position.



5. Remove the three screws (10 – 12) fastening the upper side of the Front Panel. Then, remove the Front Panel from the unit, noting the lead wires of the Auto Search Indicator P.C.Board on the Front Panel.



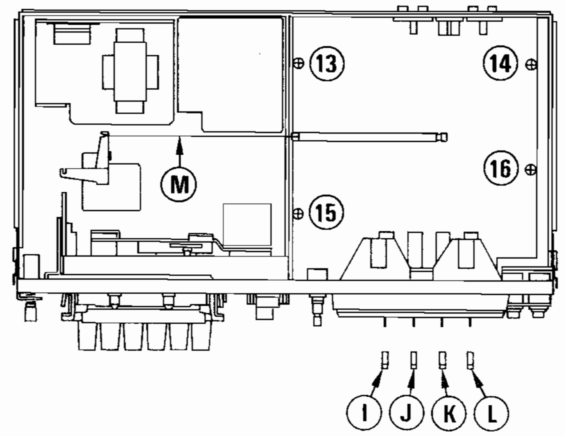
6. Reassemble in reverse order.

DISASSEMBLY INSTRUCTIONS (Continued)

AMPLIFIER P.C.BOARD REMOVAL

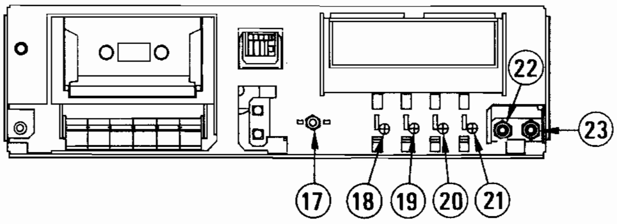
1. Remove the Cover and the Front Panel by following the instructions for them. Then, pull out the two connectors (CN1 and CN2) from the Amplifier P.C.Board.

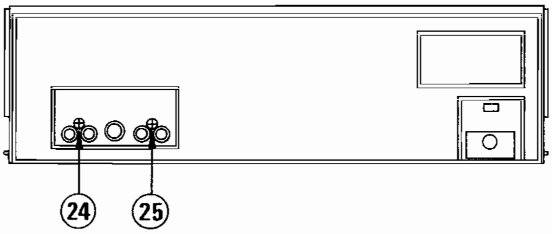
2. Pull out the four switch decorations (I – L) from their Switch Levers and remove the Record Wire (M) from the Record Lever. Then, remove the four screws (13 – 16) fastening the Amplifier P.C.Board.



3. Unsolder the yellow shield wires of the REC MUTE switch from the three pins on the Amplifier P.C.Board.

4. Remove the nut (17) holding the Input Level Control, the four screws (18 – 21) holding the switches, the two nuts (22 and 23) holding the Microphone Jacks, and the two screws (24 and 25) holding the Line Jack P.C.Board.





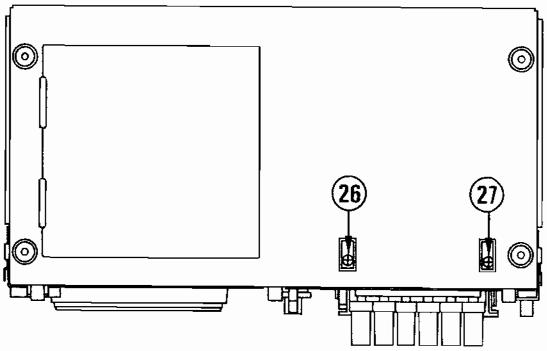
5. Carefully lift the Line Jack side of the Amplifier P.C.Board to remove the P.C.Board from the unit, noting the lead wires.

6. Reassemble in reverse order.

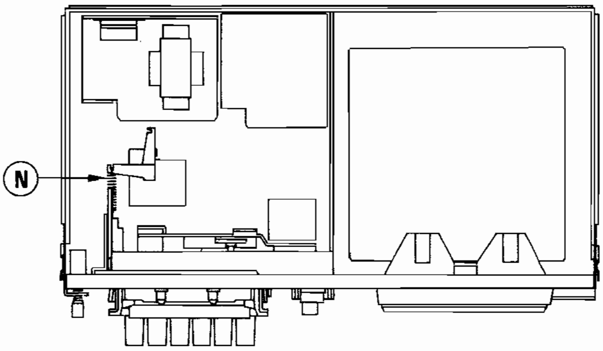
MECHANISM CHASSIS REMOVAL

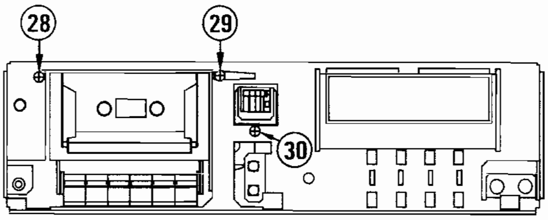
1. Remove the Cover and the Front Panel by following the instructions for them.

2. Turn the unit over and remove the two screws (26 and 27) fastening the Mechanism Chassis.



3. Place the unit in an upright position and remove the Record Lever Spring (N) from the Record Lever. Then, remove the three screws (28 – 30) fastening the Chassis.





4. Carefully remove the Mechanism Chassis from the unit, noting the lead wires.

5. Reassemble in reverse order.

MECHANICAL ADJUSTMENTS

EQUIPMENTS REQUIRED

- Fan-shaped Tension Gauge (500g maximum)
- Cassette-type Torque Meter (100g maximum)
- Thickness Gauge
- Cassette Tape (C-120)
- Silicone Grease (Example: SHIN-ETSU SILICONE KS-64)
- Paint or Glue

GENERAL REMARKS

- Before adjusting the mechanism of the unit, clean the tape contacting surfaces with a soft cloth soaked in alcohol. Trouble may occur because of oil and grease stains.

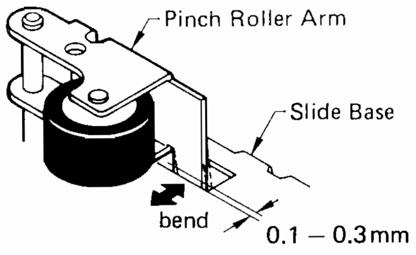
- The Belts must be kept clean while the adjustments are performed.
  - * Silicone grease (Example: SHIN-ETSU SILICONE KS-64) is applied to the Drive Belt and the Take-up Belt to protect them from abrasion.
    If necessary, apply a proper amount of silicone grease (Example: SHIN-ETSU SILICONE KS-64) to each groove of the Flywheel and Friction assemblies.

  NOTE:
  Silicone grease is not applied to the Replacement Parts.

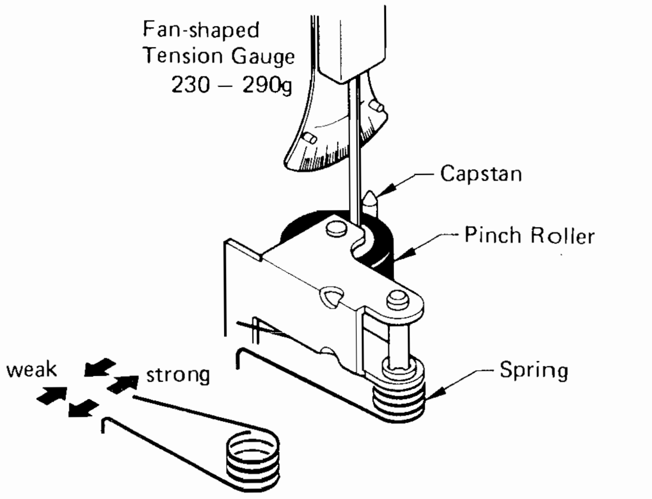
- **Never apply grease or oil to the ASO Belt. If applied, wipe it clean with benzine.**

PINCH ROLLER ADJUSTMENT

1. Set the unit in the playback mode and check to see that the clearance between the Pinch Roller Arm and the Silde Base is 0.1 – 0.3mm, and that the Take-up Reel Gear rotates before the Pinch Roller starts rotating as the PLAY button is gradually pressed.
   * If necessary, adjust the clearance by carefully bending the Pinch Roller Arm as illustrated.
   Do not excessively bend it.



2. Measure the pinch roller pressure with a fan-shaped tension gauge (500g) with the unit in the playback mode as follows:
   * Hook the fan-shaped tension gauge to the Pinch Roller as illustrated and pull it away from the Capstan.
   Then, slowly bring the Pinch Roller close to the Capstan.



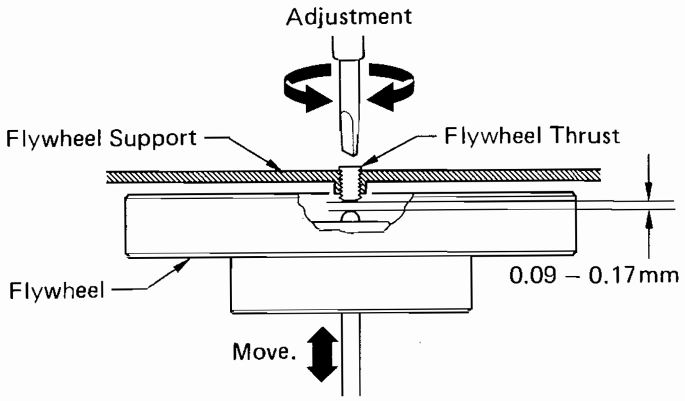
   * Measure the pressure the moment the Pinch Roller comes in contact with the Capstan and starts rotation. It should be 230 – 290g.

   * If necessary, change the pressure by bending the Spring or replace the Spring with a new one.

3. Check the Pinch Roller. If it has a defective rubber surface, replace it with a new one.

FLYWHEEL THRUST ADJUSTMENT

Check to see that the clearance between the Flywheel Thrust and Flywheel is 0.09 – 0.17mm with the chassis upside down as illustrated. If necessary, adjust the clearance by the following procedure.



1. While moving the Capstan up and down, slowly turn the Flywheel Thrust clockwise to obtain the clearance of "0" between the Thrust and the Flywheel.

   NOTE:
   Do not turn the Flywheel Thrust forcibly.

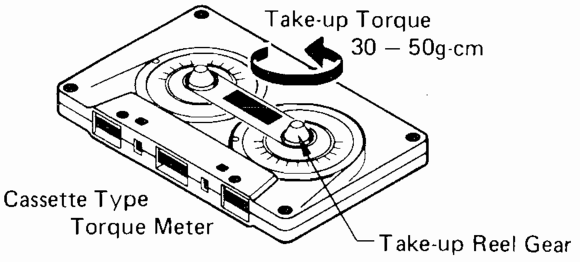
2. Turn the Thrust counter-clockwise by 45° – 90° from the position.

3. After the adjustment, secure the Flywheel Thrust with paint or glue.

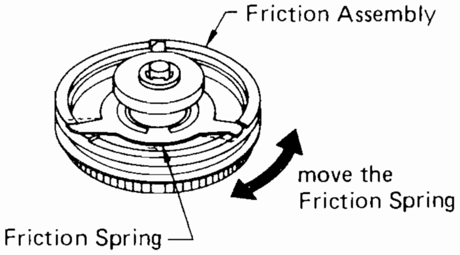
MECHANICAL ADJUSTMENTS (Continued)

TAKE-UP TORQUE ADJUSTMENT

1. Insert the cassette-type torque meter into the unit and measure the torque of the Take-up Reel Gear with the unit in the playback mode. It should be 30 – 50g-cm.


Take-up Torque
30 – 50g-cm
Cassette Type
Torque Meter
Take-up Reel Gear

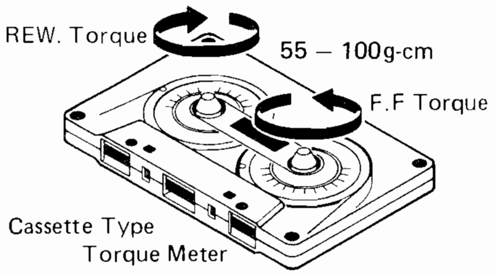
2. If necessary, adjust the torque by moving the Friction Spring of the Friction Assembly as illustrated.


Friction Assembly
move the
Friction Spring
Friction Spring

NOTE:
If the Take-up Reel Gear and the Take-up Gear run idle and produce an abnormal sound, adjust the take-up torque as low as possible.

FAST FORWARD & REWIND TORQUE

1. The fast forward and rewind torque value measured by cassette-type torque meter should be 55 – 100g-cm.


REW. Torque
55 – 100g-cm
F.F Torque
Cassette Type
Torque Meter

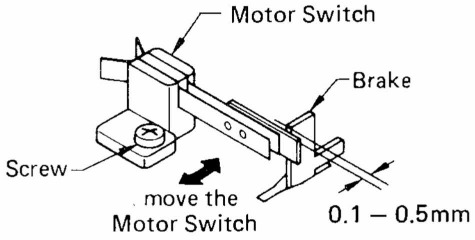
NOTE:
Read the torque values on the torque meter just before the unit automatically shuts off.

2. If the torque value is more than 100g-cm, apply a proper amount of silicone grease (Example: SHIN-ETSU SILICONE KS-64) to the groove of the Friction Assembly.

3. If the torque value is less than 55g-cm, replace the Take-up Belt with a new one.

MOTOR SWITCH ADJUSTMENT

1. Set the unit in the Stop mode and check to see that the clearance between the Motor Switch and the Brake is 0.1 – 1.5mm as illustrated, and that the Motor Switch is turned on by pressing one of the Select Buttons (PLAY, FF, or REW).

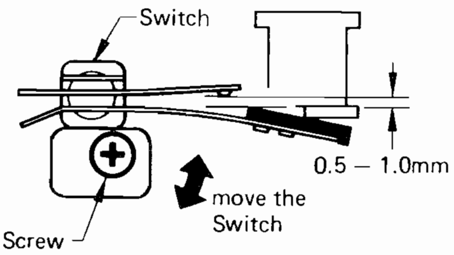

Motor Switch
Brake
Screw
move the
Motor Switch
0.1 – 0.5mm

2. If necessary, loosen the screw fastening the Motor Switch and shift the Switch to the specified position.

3. After the adjustment, tighten the screw and secure it with paint or glue.

MUTING SWITCH ADJUSTMENT

1. This Switch is normally closed. Check to see that the clearance between the both contacts of the switch is 0.5 – 1.0mm with the PLAY button down as illustrated.


Switch
0.5 – 1.0mm
move the
Switch
Screw

2. If necessary, loosen the screw fastening the Switch and move the Switch to the specified position.

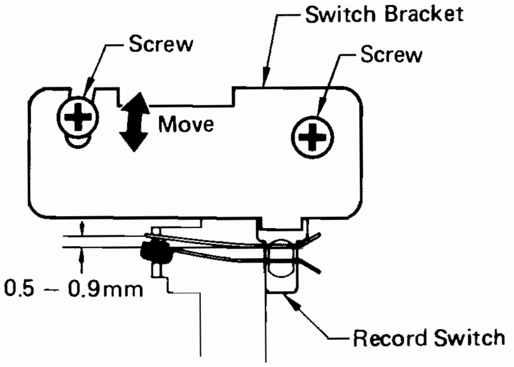
3. After the adjustment, tighten the screw and secure it with paint or glue.

MECHANICAL ADJUSTMENTS (Continued)

RECORD SWITCH ADJUSTMENT

1. This switch is closed by the Record Plate with the RECORD button down. Check to see that the RECORD Switch is bent by 0.5 – 0.9mm as illustrated after the switch contacts have been closed by the Record Plate with the unit in the recording mode.

2. If not, loosen the two screws fastening the Timing Switch Bracket and correctly adjust the bend of the Switch Contact by moving the Bracket as illustrated.


Switch Bracket
Screw
Screw
Move
0.5 – 0.9mm
Record Switch

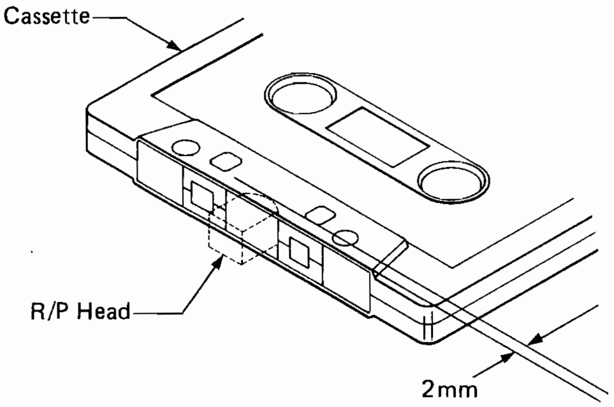
3. After the adjustment, tighten the fastening screws.

ASF (AUTO SEARCH FUNCTION) ADJUSTMENTS

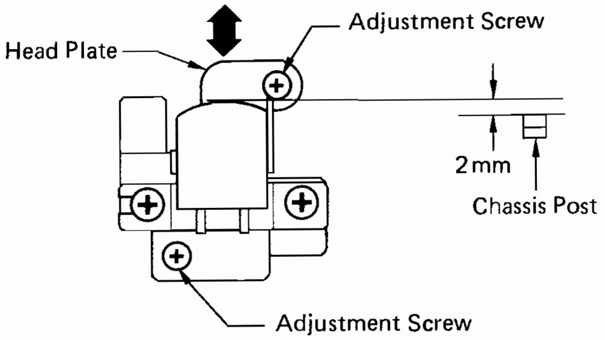
R/P HEAD POSITION ADJUSTMENT

After the R/P Head has been removed or replaced, adjust the head position by following the procedures.

NOTE:
A cassette with the specified post-head distance marked on it as shown can be used as a facilitating gauge for the Head position adjustment. (Do not use a worn cassette.)

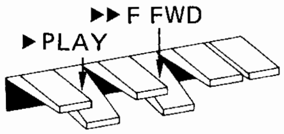

Cassette
R/P Head
2mm

1. Check each head position with the unit in the both Cue and Review modes as follows:
   * Loosen the two screws fastening the Head Plate and set the unit in the Cue mode.
   * Adjust the Head position by moving the Head Plate until the distance between the Chassis Posts and the Head becomes 2mm as illustrated. Then, tighten the fastening screws.

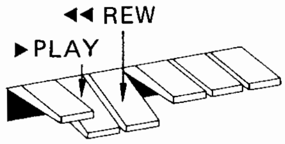

Head Plate
Adjustment Screw
2mm
Chassis Post
Adjustment Screw

2. Check the head position with the unit in the Review mode.
   * If the distance between the Chassis Posts and the Head exceeds 2mm, loosen the fastening screws and adjust the distance to 2mm by moving the Head Plate. Then, tighten the fastening screws.

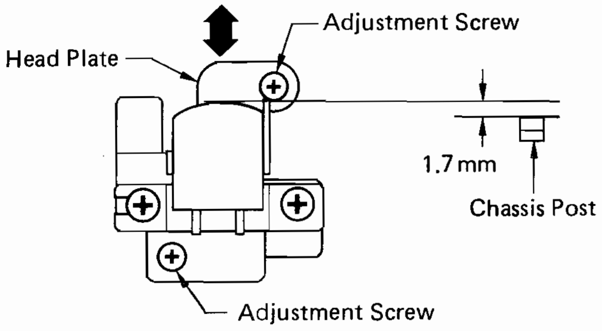
NOTE:
* To place the unit in the Cue mode, simultaneously press the PLAY and F.FWD buttons.



* To place the unit in the Review mode, simultaneously press the PLAY and REW buttons.



3. Check to see that the distance between the Chassis Posts and the Head is more than 1.7mm when the F.FWD and REW buttons are fully pressed with the unit in each mode of the Cue and the Review as illustrated.

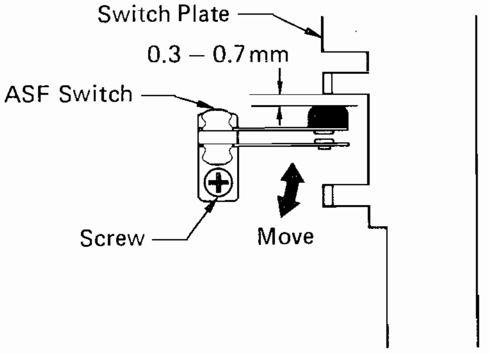

Head Plate
Adjustment Screw
1.7mm
Chassis Post
Adjustment Screw

MECHANICAL ADJUSTMENTS (Continued)

4. After the adjustment, secure the fastening screws with paint or glue.

ASF SWITCH ADJUSTMENT

1. Check to see that the clearance between the ASF Switch Contact and the Switch Plate is 0.3 – 0.7mm with the unit in the stop mode as illustrated.


Switch Plate
0.3 – 0.7mm
ASF Switch
Screw
Move

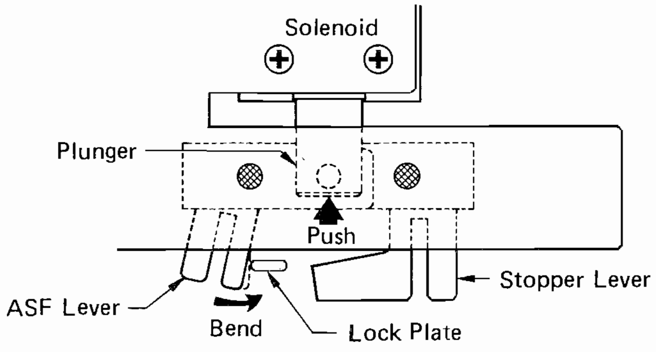
2. If not, loosen the screw fastening the Switch and move the Switch to the specified position.

3. After the adjustment, tighten the fastening screw and secure it with paint or glue.

PLUNGER STROKE ADJUSTMENT

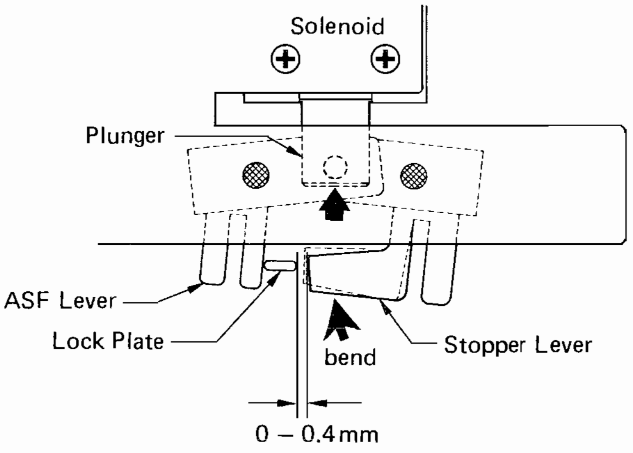
1. Set the unit in the fast forward mode and check to see that the F.FWD button is released by slowly pushing the Plunger of the Solenoid in the direction of the arrow.
   Then, make the above check in the rewind mode with the same procedure as the fast forward mode.

   * If not, adjust the ASF Lever by bending it as illustrated, so that the F.FWD and REW buttons are released by pushing the Plunger in both modes of the fast forward and the rewind.


Solenoid
Plunger
Push
Stopper Lever
ASF Lever
Bend
Lock Plate

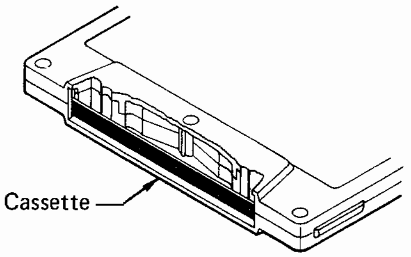
2. Place the unit in the stop mode and check to see that the clearance between the Lock Plate and the Stopper Lever is 0 – 0.4mm when the Plunger of the Solenoid is fully pushed in the direction of the arrow.

   * If not, adjust the clearance by bending the Stopper Lever as illustrated.

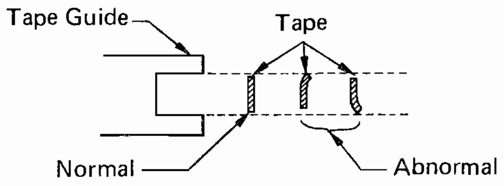

Solenoid
Plunger
ASF Lever
Lock Plate
bend
Stopper Lever
0 – 0.4mm

TAPE RUNNING CONDITION ADJUSTMENT

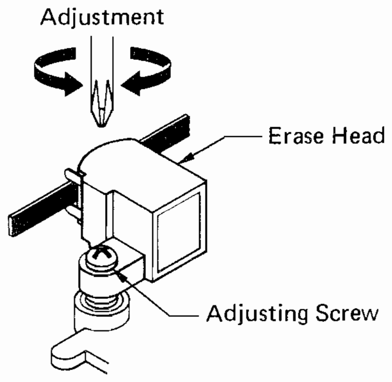
1. Prepare the cassette tape (C-120) as the test tape for this adjustment



2. Insert the test tape into the cassette compartment and play it back. Then, check to see that the tape is not curling along the Tape Guide of the Erase Head while the test tape is being played back.


Tape Guide
Tape
Normal
Abnormal

3. If necessary, tighten the adjusting screw and slowly loosen the adjusting screw until the tape is exactly centered in the Tape Guide of the Erase Head.


Adjustment
Erase Head
Adjusting Screw

4. After the adjustment, secure the adjusting screw with paint or glue.

MECHANICAL ADJUSTMENTS (Continued)

AUTO SHUT-OFF MECHANISM

FUNCTION

1. Silicone grease (Example: SHIN-ETSU SILICONE KS-64) is applied to the contacting surfaces of the Bushing and the ASO Lever, and the teeth of the ASO Lever to make the Auto Shut-off mechanism function smoothly.
   If necessary, apply a proper amount of silicone grease to them.

2. The ASO Lever is ordinarily pressed to the Bushing of the Friction Assembly by the spring and moves in the direction of arrow A in accordance with the bushing rotation.

3. The shaft of the ASO Pulley is elliptical in shape like a cam as illustrated and moves the ASO Lever in the direction of arrow B according to the rotation of the ASO Pulley.

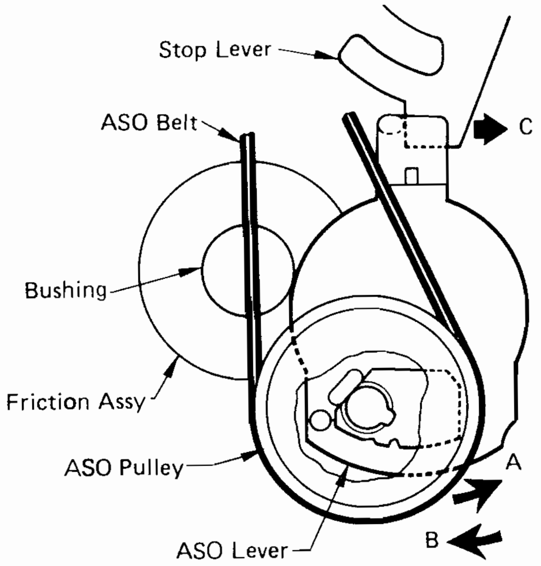
4. The teeth of the ASO Pulley and ASO Lever do not mesh and the shaft moves the ASO Lever back and forth by the above described movements (A and B).

5. When the tape is completely wound to the end, the bushing rotation stops, so that the ASO Lever is moved in the direction of arrow B by the ASO Pulley and it stops moving.

6. While the ASO Pulley is rotating, its tooth is engaged with the first tooth of the ASO Lever and it moves the ASO Lever in the direction of arrow C. Then, the tooth of the ASO Pulley is disengaged from the tooth of the ASO Lever.

7. The ASO Pulley continues rotating, so that its tooth meshes with the second tooth of the ASO Lever and it moves the ASO Lever in the direction of arrow C again.

8. Then, the ASO Lever pushes the Stop Lever in the direction of arrow C, so that the unit is set in the stop mode.



If there is a problem with the the Auto Shut-off mechanism, repair it referring to the following troubleshooting.

SYMPTOM	POSSIBLE CAUSE		REMEDY
ASO mechanism does not work properly.	ASO Spring is unhooked		Repair.
	Grease is not applied suficiently to the circumference of the Bushing or is not applied at all.		Apply grease.
	ASO Lever does not move properly.	Shaft of ASO Lever is clogged by grease or dust.	Remove grease or dust by wiping Shaft of ASO Lever with alcohol.
ASO mechanism does not work at all.	ASO Lever is in contact with Take-up Pulley of Friction Assembly.		Insert the washer below the E ring of the Bushing and keep the clearance between the E ring and the Bushing less than 0.5mm.
	ASO Belt is worn out.		Replace ASO Belt.
	ASO Belt is stained.		Wipe ASO Belt with benzine.

NOTE:
Although there is a case that the button is not locked by pressing one of the Select Buttons (PLAY, FF, or REW) without Power supplied to the unit after the unit has automatically shut off, this symptom is not a mulfunction.

ELECTRICAL ADJUSTMENTS

REQUIRED EQUIPMENT

- VTVM (2 sets)
- Frequency Counter
- Audio Signal Generator
- Dummy Load (47k-ohm)
- Dualtrace Synchroscope
- Test Tapes
  - * 3kHz test tape (Example: TEAC MTT-111) for Tape Speed Adjustment
  - * 10kHz test tape (Example: TEAC MTT-114) for Head Azimuth Adjustment
  - * Test Tape for DOLBY Level Calibration (Example: TEAC MTT-150) in Playback Gain Adjustment
- Test Tapes for recording and playback operations
  - * Normal Tape (Example: TDK AC-221 AD)
  - * Ferrichrome Tape (Example: SONY DUAD type III)
  - * Chromium Dioxide Tape (Example: TDK AC-511 SA)
  - * Metal Tape (Example: 3M Scotch Metafine)
- Alignment Tool

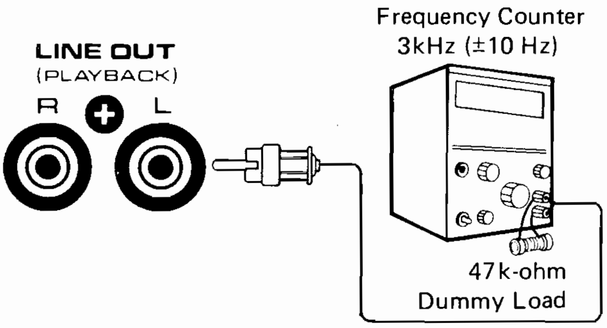
Prior to the Electrical Adjustments, set the unit and the measuring instruments as follows:

- Auto Search Switch .... OFF
- Bias Switch Fe2O3
- Equalizer Switch Fe2O3
- Tape Speed Select Switch ...... 1-7/8 ips. (4.75cm/sec.)
- Input Select Switch .... LINE
- DOLBY NR Switch .... OFF
- Audio Signal Generator Output 1kHz 0dB (1V)

NOTE.
The Electrical Adjustments should be performed in the order as described below.

TAPE SPEED ADJUSTMENT

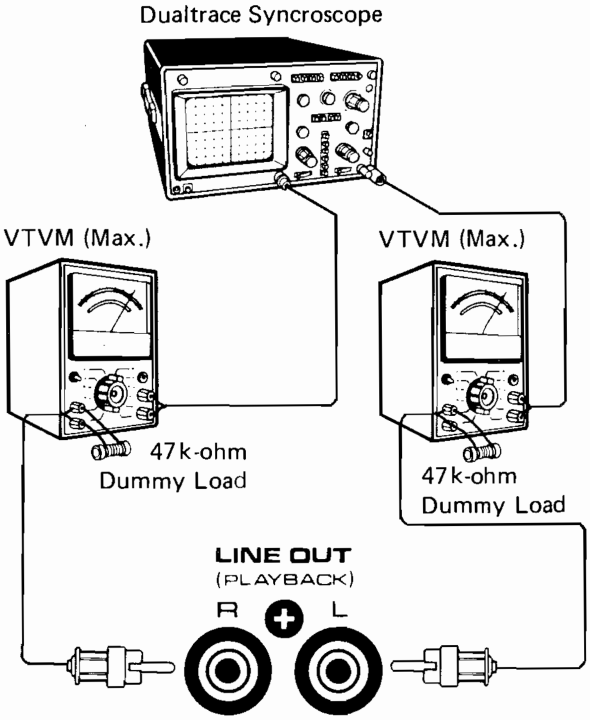
1. Connect the frequency counter to the left or right channel LINE OUT as illustrated. Then, insert a 3kHz test tape (Example: TEAC MTT-111) into the cassette compartment.



2. While playing back the test tape, adjust the potentiometer inside the Motor by turning it until the frequency counter reads 3kHz (±10Hz).

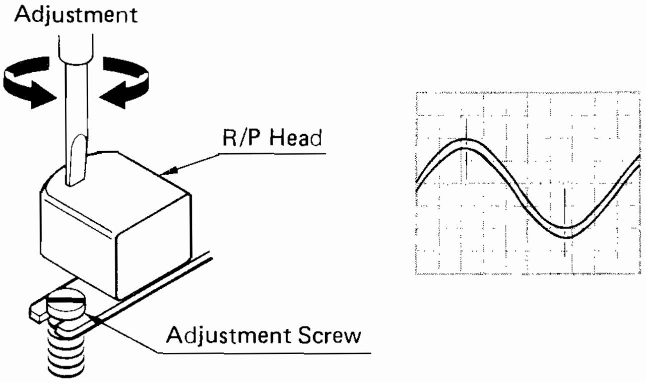
HEAD AZIMUTH ADJUSTMENT

1. Remove the cassette compartment lid from the unit and connect the dualtrace synchroscope and the VTVM to both channel LINE OUT as illustrated. Then, set the dualtrace synchroscope as follows:
   - * MODE .... CHOP (chopped)
   - * SOURCE .... INT (internal), CH1 or CH2
   - * SWEEP MODE .... AUTO (automatic)



NOTE:
Adjust the field on the synchroscope with the VOLT. ADJ. and TIME ADJ.

2. Insert a 10kHz test tape (Example: TEAC MTT-114) into the cassette compartment. While playing back the test tape, turn the azimuth adjusting screw until the wave forms of the right and left channels are superimposed and set to optimum at maximum reading of the VTVM.



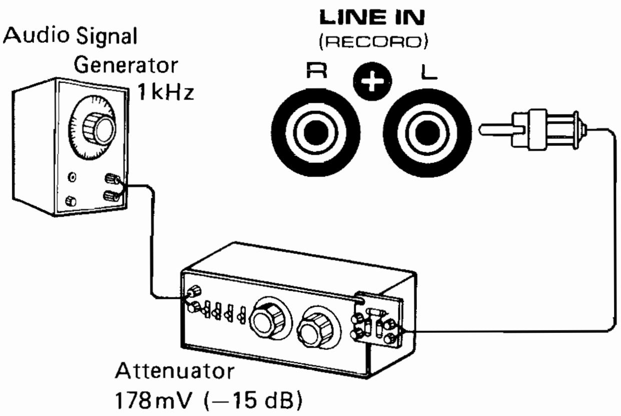
3. After the adjustment, secure the adjusting screw with paint or glue.

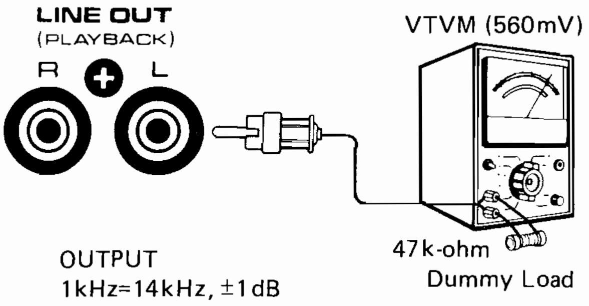
ELECTRICAL ADJUSTMENTS (Continued)

METER LEVEL ADJUSTMENT

LEFT CHANNEL

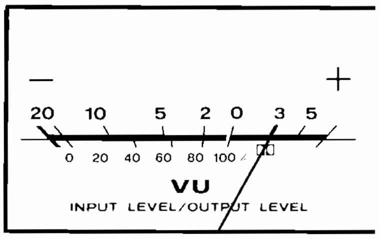
1. Connect the audio signal generator and the attenuator to the left channel LINE IN, and the VTVM to the left channel LINE OUT as illustrated. Then, insert a bulk-erased tape into the cassette compartment and set the unit in the recording mode.


Audio Signal Generator
1kHz
LINE IN
(RECORD)
R
L
Attenuator
178mV (−15 dB)


LINE OUT
(PLAYBACK)
R
L
VTVM (560mV)
OUTPUT
1kHz=14kHz, ±1dB
47k-ohm
Dummy Load

2. While feeding the 1kHz signal from the audio signal generator at 178mV (−15dB) to the unit, adjust the left channel INPUT Level Control until the VTVM reads 560mV.

3. Keeping the unit in the condition, adjust the potentiometer (P102) until the pointer of the left channel Meter swings to +3VU (DOLBY mark position) as illustrated.


−
+
20
10
5
2
0
3
5
0
20
40
60
80
100
VU
INPUT LEVEL/OUTPUT LEVEL

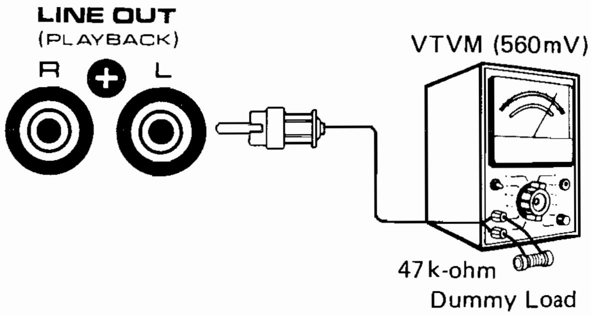
RIGHT CHANNEL

Connect the audio signal generator and the attenuator to the right channel LINE IN, and the VTVM to the right channel LINE OUT. Then, adjust the right channel INPUT Level Control and the potentiometer (P202) for the right channel by following the same procedure as LEFT CHANNEL.

PLAYBACK GAIN ADJUSTMENT

LEFT CHANNEL

1. Connect the VTVM to the left channel LINE OUT as illustrated. Then, insert the test tape for the DOLBY Level Calibration (Example: TEAC MTT-150) into the cassette compartment and set the unit in the playback mode.


LINE OUT
(PLAYBACK)
R
L
VTVM (560mV)
47k-ohm
Dummy Load

2. While playing back the test tape, adjust the potentiometer (P101) until the output level becomes 560mV on the VTVM.

RIGHT CHANNEL

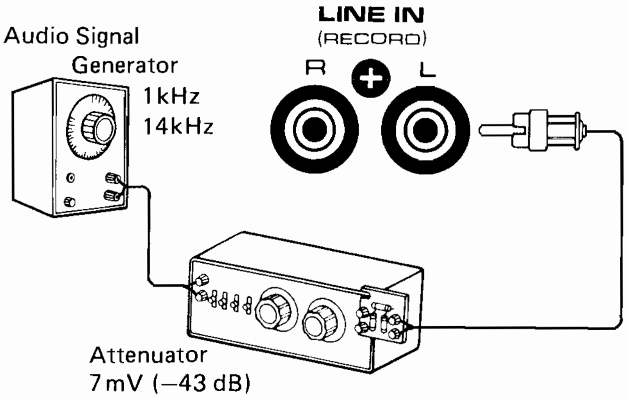
Connect the VTVM to the right channel LINE OUT. Then, adjust the potentiometer (P201) for the right channel by following the same procedure as LEFT CHANNEL.

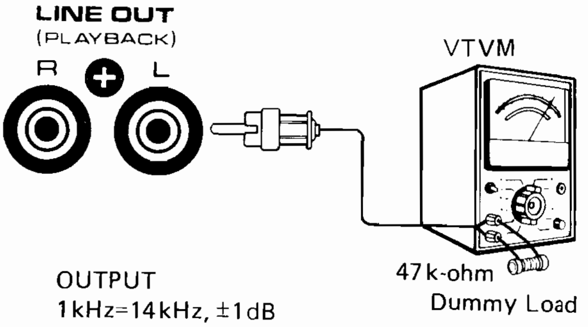
RECORDING BIAS ADJUSTMENT

- **For Metal Tape**

LEFT CHANNEL

1. Connect the audio signal generator and the attenuator to the left channel LINE IN, and the VTVM to the left channel LINE OUT as illustrated. Then, insert a metal tape (Example: 3M Scoth Metafine) into the cassette compartment.


Audio Signal Generator
1kHz
14kHz
LINE IN
(RECORD)
R
L
Attenuator
7mV (−43 dB)


LINE OUT
(PLAYBACK)
R
L
VTVM
OUTPUT
1kHz=14kHz, ±1dB
47k-ohm
Dummy Load

ELECTRICAL ADJUSTMENTS (Continued)

2. Set the Bias and Equalizer Switches to METAL.

3. With the INPUT Level Control set to the maximum, alternately record the 1kHz signal and 14kHz signal from the audio signal generator at 7mV (−43dB) on the tape several times.

4. While playing back the recorded signals, check that the 14kHz signal output is identical to 1kHz signal output or the deviation is ±1dB on the VTVM.

5. If not, adjust the potentiometer (P109) and re-check the output of each signal by playing back the signals after the recording operation for the signals.

6. Repeat the above adjustment until the specified output is obtained.

RIGHT CHANNEL

Connect the audio signal generator and the attenuator to the right channel LINE IN, and the VTVM to the right channel LINE OUT. Then, adjust the potentiometer (P209) for the right channel by following the same procedure as LEFT CHANNEL.

For Chromium Dioxide Tape

Set the Switches as follows:

* Bias Switch CrO2
* Equalizer Switch CrO2

Then, insert a chromium dioxide tape (Example: TDK AC-511 SA) into the cassette compartment. Adjust the potentiometers by following the conditions described below and the same procedure as "Metal Tape".

* Input Signals . . . . 1kHz and 14kHz
* Input Level . . . . 7mV (−43dB)
* Potentiometers for adjustment
  Left channel P108
  Right channel P208

For Ferrichrome Tape

Set the Switches as follows:

* Bias Switch . . . . FeCr
* Equalizer Switch . . . . FeCr

Then, insert a ferrichrome tape (Example: SONY DUAD type III) into the cassette compartment. Adjust the potentiometers by following the conditions described below and the same procedure as "METAL TAPE".

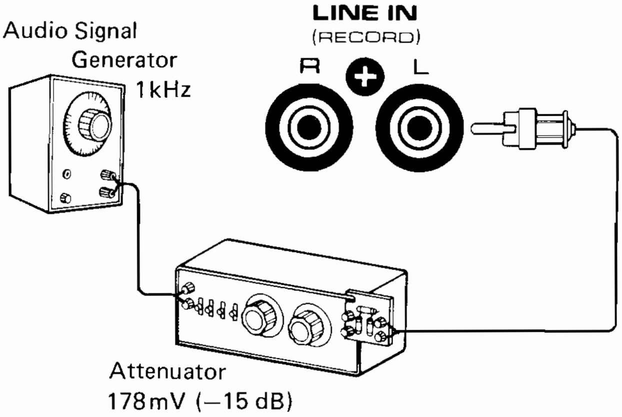
* Input Signals . . . . 1kHz and 14kHz
* Input Level . . . . 7mV (−43dB)
* Potentiometers for adjustment
  Left channel P107
  Right channel P207

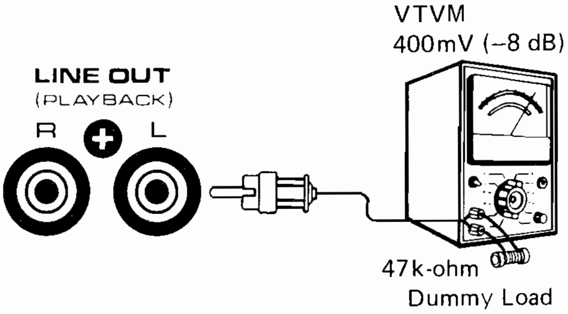
RECORDING GAIN ADJUSTMENT

For Metal Tape

LEFT CHANNEL

1. Connect the audio signal generator and the attenuator to the left channel LINE IN, and the VTVM to the left channel LINE OUT as illustrated. Then, insert a metal tape (Example: 3M Scotch Metafine) into the cassette compartment.





2. Set the Bias and Equalizer Switches to METAL.

3. Place the unit in the recording mode with the PAUSE button down. Feed 1kHz signal from the audio signal generator at 178mV (−15dB) to the unit and adjust the left channel INPUT Level Control until the VTVM reads 400mV (−8dB). Then, record the signal on the tape by repressing the PAUSE button.

4. While playing back the recorded signal, check that the VTVM reads 400mV.

5. If not, adjust the potentiometer (P103) and re-check the output by playing back the signal after the recording operation for the signal.

6. Repeat the above adjustment until the specified output is obtained.

RIGHT CHANNEL

Connect the audio signal generator and the attenuator to the right channel LINE IN, and the VTVM to the right channel LINE OUT. Then, adjust the right channel INPUT Level Control and the potentiometer (P203) for the right channel by following the same procedure as LEFT CHANNEL.

ELECTRICAL ADJUSTMENTS (Continued)

• For Chromium Dioxide Tape

Set the Switches as follows:

* Bias Switch . . . . CrO_2
* Equalizer Switch . . . . CrO_2

Then, insert a chromium dioxide tape (Example: TDK AC-511 SA) into the cassette compartment. Adjust the INPUT Level Controls and the potentiometers by following the conditions described below and the same procedure as "Metal Tape".

* Input Signal 1kHz
* Input Level . . . . 178mV (−15dB)
* Potentiometers for adjustment
  Left channel P104
  Right channel P204

• For Ferrichrome Tape

Set the Switches as follows:

* Bias Switch . . . . FeCr
* Equalizer Switch . . . . FeCr

Then, insert a ferrichrome tape (Example: SONY DUAD type III) into the cassette compartment. Adjust the INPUT Level Controls and the potentiometers by following the conditions described below and the same procedure as "Metal Tape".

* Input Signal 1kHz
* Input Level . . . . 178mV (−15dB)
* Potentiometers for adjustment
  Left channel P105
  Right channel P205

• For Normal Tape

Set the Switches as follows:

* Bias Switch . . . . Fe_2O_3
* Equalizer Switch . . . . Fe_2O_3

Then, insert a normal tape (Example: TDK AC-221 AD) into the cassette compartment. Adjust the INPUT Level Controls and the potentiometers by following the conditions described below and the same procedure as "Metal Tape".

* Input Signal 1kHz
* Input Level . . . . 200mV (−14dB)
* Potentiometers for adjustment
  Left channel P106
  right channel P206

PARTS LIST

PRODUCT SAFETY NOTICE

PRODUCT SAFETY SHOULD BE CONSIDERED WHEN A COMPONENT REPLACEMENT IS MADE IN ANY AREA OF AN UNIT. COMPONENTS INDICATED BY A MARK ⚠ IN THIS PARTS LIST AND THE SCHEMATIC DIAGRAM SHOW COMPONENTS WHOSE VALUE HAS SPECIAL SIGNIFICANCE TO PRODUCT SAFETY. IT IS PARTICULARLY RECOMMENDED THAT ONLY PARTS SPECIFIED ON THE FOLLOWING PARTS LIST BE USED FOR COMPONENT REPLACEMENT POINTED OUT BY THE MARK.

Ref. No.	Part No.	Description	Q'ty
PACKAGE			
	141 6 1419 42604	Individual Carton	1
	141 6 1449 59300	Styrofoam Case	1
	141 6 1449 59400	Styrofoam Case	1
	141 6 2519 09790	Poly Cover	1
	141 6 2519 10025	Poly Cover	1
	141 6 2519 24033	Poly Cover	1
	141 6 4559 00100	Serial No. Sheet	3
	141 6 4799 17101	Colour Label (Silver)	1
	141 6 4799 17200	Colour Label (Black)	1
ACCESSORIES			
	4 2369 70571	Patch Cord	2
	141 6 4119 92800	Instruction Manual	1
	141 6 4519 19400	Warranty Card	1
	141 6 4729 07400	Caution Label	1
	141 6 4729 07700	Caution Label	1
	131 2 1801 13900	Leg	4
CABINET			
ME1	4 5119 70561	Indicator	1
	141 0 1119 64000	Front Cabinet Assy (Silver)	1
	141 0 1119 64005	Front Cabinet Assy (Black)	1
	141 2 1119 57501	Cover	1
	141 2 1219 13600	Cassette Lid Panel	1
	141 2 1319 16400	Window	1
	141 2 1339 21300	Head Cover	1
	141 2 1419 09242	Rating Plate	1
	141 2 2449 29600	Sheet Panel	1
	141 2 4219 15500	Screw, Washer	4
	141 2 4219 19000	Dress Screw	2
	141 2 4469 29201	Cushion	2
	143 3 1903 00811	Screw, Brazier Hd. Tapping-B +M3.0x8	3
	143 3 1903 01011	Screw, Brazier Hd. Tapping-B +M3.0x10	5
	141 0 1619 26501	Power Switch Knob Assy (Silver)	1
	141 0 1619 26502	Power Switch Knob Assy (Black)	1
	141 0 1619 26601	Knob Assy (Silver)	4
	141 0 1619 26602	Knob Assy (Black)	4
	141 0 1639 07301	Switch Knob Assy (Silver)	2
	141 0 1639 07303	Switch Knob Assy (Black)	2
	141 2 1569 02801	Decorate Knob	4
	141 2 1639 31601	Knob (Silver)	1
	141 2 1639 31602	Knob (Black)	1
	141 2 1639 31701	Knob (Silver)	1
	141 2 1639 31702	Knob (Black)	1
AMPLIFIER P.C.B. ASSY			
	4 1329 75170	Amplifier P.C.B. Assy	1
	4 2589 71490	OSC Block	1
CN1	4 2369 71450	Connector 6P	1
CN2	4 2369 71480	Connector 3P	1
C101	CD4 7 5160 0000V	Electrolytic 4.7 µF 16V	1
C102	CC4 7 1500 KE00C	Ceramic 470 pF 50V ±10%	1
C103	CC1 2 0500 KD00C	Ceramic 12 pF 50V ±10%	1
C104	CD1 0 7100 0001V	Electrolytic 100 µF 10V	1
C105	CD1 0 6160 0001V	Electrolytic 10 µF 16V	1
C106	CD1 0 6160 0001V	Electrolytic 10 µF 16V	1
C107	CM3 3 2500 K00SV	Mylar 0.0033 µF 50V ±10%	1

Ref. No.	Part No.	Description	Q'ty
AMPLIFIER P.C.B. ASSY			
C108	CD1 0 5160 0000V	Electrolytic 1 µF 16V	1
C109	CD1 0 5160 0000V	Electrolytic 1 µF 16V	1
C110	CD2 2 7160 0001V	Electrolytic 220 µF 16V	1
C111	CD4 7 6160 0001V	Electrolytic 47 µF 16V	1
C112	CC1 0 1500 KE00C	Ceramic 100 pF 50V ±10%	1
C113	CA3 3 4100 K000V	Aluminum 0.33 µF 10V ±10%	1
C114	CA1 0 4100 K000V	Aluminum 0.1 µF 10V ±10%	1
C115	CD1 0 6160 0001V	Electrolytic 10 µF 16V	1
C116	CM4 7 3500 K00SV	Mylar 0.047 µF 50V ±10%	1
C117	CM4 7 2500 K00SV	Mylar 0.0047 µF 50V ±10%	1
C118	CD1 0 6160 0001V	Electrolytic 10 µF 16V	1
C119	CM2 7 3500 K00SV	Mylar 0.027 µF 50V ±10%	1
C120	CM5 6 2500 K00SV	Mylar 0.0056 µF 50V ±10%	1
C121	CC2 2 2500 KE00C	Ceramic 0.0022 µF 50V ±10%	1
C122	CD1 0 6160 0001V	Electrolytic 10 µF 16V	1
C123	CD1 0 6160 0001V	Electrolytic 10 µF 16V	1
C124	CD2 2 5100 0000V	Electrolytic 2.2 µF 10V	1
C125	CC4 7 0500 KD00C	Ceramic 47 pF 50V ±10%	1
C126	CD1 0 7100 0001V	Electrolytic 100 µF 10V	1
C127	CC3 9 0500 KD00C	Ceramic 39 pF 50V ±10%	1
C128	CD4 7 6100 0001V	Electrolytic 47 µF 10V	1
C129	CD1 0 6160 0001V	Electrolytic 10 µF 16V	1
C130	CA1 5 4100 K000V	Aluminum 0.15 µF 10V ±10%	1
C131	CC6 8 0500 KD00C	Ceramic 68 pF 50V ±10%	1
C132	CC8 2 0500 KD00C	Ceramic 82 pF 50V ±10%	1
C133	CM2 2 3500 K00SV	Mylar 0.022 µF 50V ±10%	1
C134	CM3 3 3500 K00SV	Mylar 0.033 µF 50V ±10%	1
C135	CM2 2 3500 K00SV	Mylar 0.022 µF 50V ±10%	1
C136	CM1 8 3500 K00SV	Mylar 0.018 µF 50V ±10%	1
C137	CC2 2 1500 KE00C	Ceramic 220 pF 50V ±10%	1
C138	CD1 0 6250 0001V	Electrolytic 10 µF 25V	1
C139	CC4 7 1500 KE00C	Ceramic 470 pF 50V ±10%	1
C140	CD2 2 6250 0001V	Electrolytic 22 µF 25V	1
C141	CD4 7 4100 0000V	Electrolytic 0.47 µF 10V	1
C142	CD4 7 4100 0000V	Electrolytic 0.47 µF 10V	1
C143	CM1 2 3500 K00SV	Mylar 0.012 µF 50V ±10%	1
C144	CD4 7 6100 0001V	Electrolytic 47 µF 10V	1
C145	CA1 0 4100 K000V	Aluminum 0.1 µF 10V ±10%	1
C146	CM1 8 3500 K00SV	Mylar 0.018 µF 50V ±10%	1
C201	CD4 7 5160 0000V	Electrolytic 4.7 µF 16V	1
C202	CC4 7 1500 KE00C	Ceramic 470 pF 50V ±10%	1
C203	CC1 2 0500 KD00C	Ceramic 12 pF 50V ±10%	1
C204	CD1 0 7100 0001V	Electrolytic 100 µF 10V	1
C205	CD1 0 6160 0001V	Electrolytic 10 µF 16V	1
C206	CD1 0 6160 0001V	Electrolytic 10 µF 16V	1
C207	CM3 3 2500 K00SV	Mylar 0.0033 µF 50V ±10%	1
C208	CD1 0 5160 0000V	Electrolytic 1 µF 16V	1
C209	CD1 0 5160 0000V	Electrolytic 1 µF 16V	1
C210	CD2 2 7160 0001V	Electrolytic 220 µF 16V	1
C211	CD4 7 6160 0001V	Electrolytic 47 µF 16V	1
C212	CC1 0 1500 KE00C	Ceramic 100 pF 50V ±10%	1
C213	CA3 3 4100 K000V	Aluminum 0.33 µF 10V ±10%	1
C214	CA1 0 4100 K000V	Aluminum 0.1 µF 10V ±10%	1
C215	CD1 0 6160 0001V	Electrolytic 10 µF 16V	1
C216	CM4 7 3500 K00SV	Mylar 0.047 µF 50V ±10%	1
C217	CM4 7 2500 K00SV	Mylar 0.0047 µF 50V ±10%	1
C218	CD1 0 6160 0001V	Electrolytic 10 µF 16V	1
C219	CM2 7 3500 K00SV	Mylar 0.027 µF 50V ±10%	1
C220	CM5 6 2500 K00SV	Mylar 0.0056 µF 50V ±10%	1

PARTS LIST (Continued)

Ref. No.	Part No.	Description	Q'ty
AMPLIFIER P.C.B. ASSY			
C221	CC2 2 2500 KE00C	Ceramic 0.0022 µF 50V ±10%	1
C222	CD1 0 6160 0001V	Electrolytic 10 µF 16V	1
C223	CD1 0 6160 0001V	Electrolytic 10 µF 16V	1
C224	CD2 2 5100 0000V	Electrolytic 2.2 µF 10V	1
C225	CC4 7 0500 KD00C	Ceramic 47 pF 50V ±10%	1
C226	CD1 0 7100 0001V	Electrolytic 100 µF 10V	1
C227	CC3 9 0500 KD00C	Ceramic 39 pF 50V ±10%	1
C228	CD4 7 6100 0001V	Electrolytic 47 µF 10V	1
C229	CD1 0 6160 0001V	Electrolytic 10 µF 16V	1
C230	CA1 5 4100 K000V	Aluminum 0.15 µF 10V ±10%	1
C231	CC6 8 0500 KD00C	Ceramic 68 pF 50V ±10%	1
C232	CC8 2 0500 KD00C	Ceramic 82 pF 50V ±10%	1
C233	CM2 2 3500 K00SV	Mylar 0.022 µF 50V ±10%	1
C234	CM3 3 3500 K00SV	Mylar 0.033 µF 50V ±10%	1
C235	CM2 2 3500 K00SV	Mylar 0.022 µF 50V ±10%	1
C236	CM1 8 3500 K00SV	Mylar 0.018 µF 50V ±10%	1
C237	CC2 2 1500 KE00C	Ceramic 220 pF 50V ±10%	1
C238	CD1 0 6250 0001V	Electrolytic 10 µF 25V	1
C239	CC4 7 1500 KE00C	Ceramic 470 pF 50V ±10%	1
C240	CD2 2 6250 0001V	Electrolytic 22 µF 25V	1
C241	CD4 7 4100 0000V	Electrolytic 0.47 µF 10V	1
C242	CD4 7 4100 0000V	Electrolytic 0.47 µF 10V	1
C243	CM1 2 3500 K00SV	Mylar 0.012 µF 50V ±10%	1
C244	CD4 7 6100 0001V	Electrolytic 47 µF 10V	1
C245	CA1 0 4100 K000V	Aluminum 0.1 µF 10V ±10%	1
C246	CM1 8 3500 K00SV	Mylar 0.018 µF 50V ±10%	1
C301	CD4 7 7350 0001V	Electrolytic 470 µF 35V	1
C302	CD1 0 7250 0001V	Electrolytic 100 µF 25V	1
C303	CD1 0 7100 0001V	Electrolytic 100 µF 10V	1
C304	CD1 0 7350 0001V	Electrolytic 100 µF 35V	1
C305	CD1 0 7250 0001V	Electrolytic 100 µF 25V	1
C306	CD4 7 6350 0001V	Electrolytic 47 µF 35V	1
C307	CD4 7 7350 0001V	Electrolytic 470 µF 35V	1
C308	CD1 0 5500 0001V	Electrolytic 1 µF 50V	1
C309	CD2 2 5500 0001V	Electrolytic 2.2 µF 50V	1
C310	CD2 2 5500 0001V	Electrolytic 2.2 µF 50V	1
C311	CD2 2 5500 0001V	Electrolytic 2.2 µF 50V	1
D103	202 5 9110 18820	Diode, 1S188	1
D203	202 5 9110 18820	Diode, 1S188	1
D301	4 2029 70420	Diode, RD6.8EB	1
D302	4 2029 70420	Diode, RD6.8EB	1
D304	202 5 9110 18820	Diode, 1S188	1
J4	4 2359 73600	Jack 2P (Line In)	1
J5	4 2359 73600	Jack 2P (Line Out)	1
J6	4 2359 71552	DIN Socket 5P (Record/Play)	1
L101	4 2729 70290	Coil (33 mH)	1
L102	4 2729 70280	Coil (3.9 mH)	1
L103	4 2729 70240	Coil (2.7 mH)	1
L104	4 2729 70230	Coil (2.2 mH)	1
L105	4 2729 70341	DOLBY Filter	1
L201	4 2729 70290	Coil (33 mH)	1
L202	4 2729 70280	Coil (3.9 mH)	1
L203	4 2729 70240	Coil (2.7 mH)	1
L204	4 2729 70230	Coil (2.2 mH)	1
L205	4 2729 70341	DOLBY Filter	1
P101	4 2229 72967	Potentiometer (B-10 k ohm)	1
P102	4 2229 72971	Potentiometer (B-100 k ohm)	1
P103	4 2229 72967	Potentiometer (B-10 k ohm)	1
P104	4 2229 72967	Potentiometer (B-10 k ohm)	1
P105	4 2229 72967	Potentiometer (B-10 k ohm)	1
P106	4 2229 72967	Potentiometer (B-10 k ohm)	1
P107	4 2229 72971	Potentiometer (B-100 k ohm)	1
P108	4 2229 72971	Potentiometer (B-100 k ohm)	1
P109	4 2229 72971	Potentiometer (B-100 k ohm)	1
P201	4 2229 72967	Potentiometer (B-10 k ohm)	1
P202	4 2229 72971	Potentiometer (B-100 k ohm)	1
P203	4 2229 72967	Potentiometer (B-10 k ohm)	1
P204	4 2229 72967	Potentiometer (B-10 k ohm)	1
P205	4 2229 72967	Potentiometer (B-10 k ohm)	1
P206	4 2229 72967	Potentiometer (B-10 k ohm)	1

Ref. No.	Part No.	Description	Q'ty
AMPLIFIER P.C.B. ASSY			
P207	4 2229 72971	Potentiometer (B-100 k ohm)	1
P208	4 2229 72971	Potentiometer (B-100 k ohm)	1
P209	4 2229 72971	Potentiometer (B-100 k ohm)	1
IC101	4 2069 70380	IC, NE646B	1
IC102	4 2069 70410	IC, TA7129P	1
IC201	4 2069 70380	IC, NE646B	1
IC202	4 2069 70410	IC, TA7129P	1
IC301	206 5 0763 12210	IC, LA3122	1
R101	RD4 7 3251 JS000	Carbon 47 k ohm 1/4W ±5%	1
R103	RD1 8 3251 JS000	Carbon 18 k ohm 1/4W ±5%	1
R104	RD1 0 1251 JS000	Carbon 100 ohm 1/4W ±5%	1
R105	RD2 2 3251 JS000	Carbon 22 k ohm 1/4W ±5%	1
R106	RD2 2 4251 JS000	Carbon 220 k ohm 1/4W ±5%	1
R107	RD1 0 4251 JS000	Carbon 100 k ohm 1/4W ±5%	1
R108	RD3 0 3251 JS000	Carbon 30 k ohm 1/4W ±5%	1
R109	RD1 0 2251 JS000	Carbon 1 k ohm 1/4W ±5%	1
R110	RD1 5 4251 JS000	Carbon 150 k ohm 1/4W ±5%	1
R111	RD3 6 3251 JS000	Carbon 36 k ohm 1/4W ±5%	1
R112	RD3 3 3251 JS000	Carbon 33 k ohm 1/4W ±5%	1
R113	RD6 2 4251 JS000	Carbon 620 k ohm 1/4W ±5%	1
R114	RD1 0 4251 JS000	Carbon 100 k ohm 1/4W ±5%	1
R115	RD3 3 2251 JS000	Carbon 3.3 k ohm 1/4W ±5%	1
R116	RD3 3 2251 JS000	Carbon 3.3 k ohm 1/4W ±5%	1
R117	RD1 0 2251 JS000	Carbon 1 k ohm 1/4W ±5%	1
R118	RD2 0 4251 JS000	Carbon 200 k ohm 1/4W ±5%	1
R119	RD1 0 2251 JS000	Carbon 1 k ohm 1/4W ±5%	1
R120	RH6 8 1102 KH000	Metal 680 ohm 1W ±10%	1
R121	RD2 7 4251 JS000	Carbon 270 k ohm 1/4W ±5%	1
R122	RD3 3 2251 JS000	Carbon 3.3 k ohm 1/4W ±5%	1
R123	RD4 7 3251 JS000	Carbon 47 k ohm 1/4W ±5%	1
R124	RD1 0 4251 JS000	Carbon 100 k ohm 1/4W ±5%	1
R125	RD1 0 4251 JS000	Carbon 100 k ohm 1/4W ±5%	1
R126	RD2 2 3251 JS000	Carbon 22 k ohm 1/4W ±5%	1
R127	RD1 0 4251 JS000	Carbon 100 k ohm 1/4W ±5%	1
R128	RD1 8 1251 JS000	Carbon 180 ohm 1/4W ±5%	1
R129	RD2 2 2251 JS000	Carbon 2.2 k ohm 1/4W ±5%	1
R130	RD1 0 2251 JS000	Carbon 1 k ohm 1/4W ±5%	1
R131	RD1 0 2251 JS000	Carbon 1 k ohm 1/4W ±5%	1
R132	RD6 8 2251 JS000	Carbon 6.8 k ohm 1/4W ±5%	1
R133	RD1 0 5251 JS000	Carbon 1M ohm 1/4W ±5%	1
R134	RD2 7 4251 JS000	Carbon 270 k ohm 1/4W ±5%	1
R135	RD2 4 3251 JS000	Carbon 24 k ohm 1/4W ±5%	1
R136	RD3 3 1251 JS000	Carbon 330 ohm 1/4W ±5%	1
R137	RD3 9 2251 JS000	Carbon 3.9 k ohm 1/4W ±5%	1
R138	RD1 0 3251 JS000	Carbon 10 k ohm 1/4W ±5%	1
R139	RD2 7 2251 JS000	Carbon 2.7 k ohm 1/4W ±5%	1
R140	RD8 2 4251 JS000	Carbon 820 k ohm 1/4W ±5%	1
R141	RD1 0 4251 JS000	Carbon 100 k ohm 1/4W ±5%	1
R142	RD3 3 3251 JS000	Carbon 33 k ohm 1/4W ±5%	1
R143	RD1 2 3251 JS000	Carbon 12 k ohm 1/4W ±5%	1
R144	RD2 2 2251 JS000	Carbon 2.2 k ohm 1/4W ±5%	1
R145	RD1 8 3251 JS000	Carbon 18 k ohm 1/4W ±5%	1
R146	RD8 2 0251 JS000	Carbon 82 ohm 1/4W ±5%	1
R147	RD8 2 0251 JS000	Carbon 82 ohm 1/4W ±5%	1
R148	RD2 0 2251 JS000	Carbon 2.0 k ohm 1/4W ±5%	1
R149	RD5 6 0251 JS000	Carbon 56 ohm 1/4W ±5%	1
R150	RD3 3 3251 JS000	Carbon 33 k ohm 1/4W ±5%	1
R151	RD3 3 3251 JS000	Carbon 33 k ohm 1/4W ±5%	1
R152	RD3 3 3251 JS000	Carbon 33 k ohm 1/4W ±5%	1
R153	RD3 3 3251 JS000	Carbon 33 k ohm 1/4W ±5%	1
R154	RD3 3 3251 JS000	Carbon 33 k ohm 1/4W ±5%	1
R155	RD2 2 3251 JS000	Carbon 22 k ohm 1/4W ±5%	1
R157	RD1 2 3251 JS000	Carbon 12 k ohm 1/4W ±5%	1
R158	RD1 2 3251 JS000	Carbon 12 k ohm 1/4W ±5%	1
R159	RD2 2 3251 JS000	Carbon 22 k ohm 1/4W ±5%	1
R160	RD1 0 3251 JS000	Carbon 10 k ohm 1/4W ±5%	1
R161	RD2 7 4251 JS000	Carbon 270 k ohm 1/4W ±5%	1
R162	RD1 0 2251 JS000	Carbon 1 k ohm 1/4W ±5%	1
R163	RD4 7 2251 JS000	Carbon 4.7 k ohm 1/4W ±5%	1
R164	RD1 0 1251 JS000	Carbon 100 ohm 1/4W ±5%	1

PARTS LIST (Continued)

Ref. No.	Part No.	Description	Q'ty
AMPLIFIER P.C.B. ASSY			
R165	RD1 0 3251 JS000	Carbon 10 k ohm 1/4W ±5%	1
R167	RD3 3 3251 JS000	Carbon 33 k ohm 1/4W ±5%	1
R168	RD3 3 3251 JS000	Carbon 33 k ohm 1/4W ±5%	1
R169	RD3 3 3251 JS000	Carbon 33 k ohm 1/4W ±5%	1
R170	RD3 3 3251 JS000	Carbon 33 k ohm 1/4W ±5%	1
R180	RD1 8 5251 JS000	Carbon 1.8M ohm 1/4W ±5%	1
R201	RD4 7 3251 JS000	Carbon 47 k ohm 1/4W ±5%	1
R203	RD1 8 3251 JS000	Carbon 18 k ohm 1/4W ±5%	1
R204	RD1 0 1251 JS000	Carbon 100 ohm 1/4W ±5%	1
R205	RD2 2 3251 JS000	Carbon 22 k ohm 1/4W ±5%	1
R206	RD2 2 4251 JS000	Carbon 220 k ohm 1/4W ±5%	1
R207	RD1 0 4251 JS000	Carbon 100 k ohm 1/4W ±5%	1
R208	RD3 0 3251 JS000	Carbon 30 k ohm 1/4W ±5%	1
R209	RD1 0 2251 JS000	Carbon 1 k ohm 1/4W ±5%	1
R210	RD1 5 4251 JS000	Carbon 150 k ohm 1/4W ±5%	1
R211	RD3 6 3251 JS000	Carbon 36 k ohm 1/4W ±5%	1
R212	RD3 3 3251 JS000	Carbon 33 k ohm 1/4W ±5%	1
R213	RD6 2 4251 JS000	Carbon 620 k ohm 1/4W ±5%	1
R214	RD1 0 4251 JS000	Carbon 100 k ohm 1/4W ±5%	1
R215	RD3 3 2251 JS000	Carbon 3.3 k ohm 1/4W ±5%	1
R216	RD3 3 2251 JS000	Carbon 3.3 k ohm 1/4W ±5%	1
R217	RD1 0 2251 JS000	Carbon 1 k ohm 1/4W ±5%	1
R218	RD2 0 4251 JS000	Carbon 200 k ohm 1/4W ±5%	1
R219	RD1 0 2251 JS000	Carbon 1 k ohm 1/4W ±5%	1
R220	RH6 8 1102 KH000	Metal 680 ohm 1W ±10%	1
R221	RD2 7 4251 JS000	Carbon 270 k ohm 1/4W ±5%	1
R222	RD3 3 2251 JS000	Carbon 3.3 k ohm 1/4W ±5%	1
R223	RD4 7 3251 JS000	Carbon 47 k ohm 1/4W ±5%	1
R224	RD1 0 4251 JS000	Carbon 100 k ohm 1/4W ±5%	1
R225	RD1 0 4251 JS000	Carbon 100 k ohm 1/4W ±5%	1
R226	RD2 2 3251 JS000	Carbon 22 k ohm 1/4W ±5%	1
R227	RD1 0 4251 JS000	Carbon 100 k ohm 1/4W ±5%	1
R228	RD1 8 1251 JS000	Carbon 180 ohm 1/4W ±5%	1
R229	RD2 2 2251 JS000	Carbon 2.2 k ohm 1/4W ±5%	1
R230	RD1 0 2251 JS000	Carbon 1 k ohm 1/4W ±5%	1
R231	RD1 0 2251 JS000	Carbon 1 k ohm 1/4W ±5%	1
R232	RD6 8 2251 JS000	Carbon 6.8 k ohm 1/4W ±5%	1
R233	RD1 0 5251 JS000	Carbon 1M ohm 1/4W ±5%	1
R234	RD2 7 4251 JS000	Carbon 270 k ohm 1/4W ±5%	1
R235	RD2 4 3251 JS000	Carbon 24 k ohm 1/4W ±5%	1
R236	RD3 3 1251 JS000	Carbon 330 ohm 1/4W ±5%	1
R237	RD3 9 2251 JS000	Carbon 3.9 k ohm 1/4W ±5%	1
R238	RD1 0 3251 JS000	Carbon 10 k ohm 1/4W ±5%	1
R239	RD2 7 2251 JS000	Carbon 2.7 k ohm 1/4W ±5%	1
R240	RD8 2 4251 JS000	Carbon 820 k ohm 1/4W ±5%	1
R241	RD1 0 4251 JS000	Carbon 100 k ohm 1/4W ±5%	1
R242	RD3 3 3251 JS000	Carbon 33 k ohm 1/4W ±5%	1
R243	RD1 2 3251 JS000	Carbon 12 k ohm 1/4W ±5%	1
R244	RD2 2 2251 JS000	Carbon 2.2 k ohm 1/4W ±5%	1
R245	RD1 8 3251 JS000	Carbon 18 k ohm 1/4W ±5%	1
R246	RD8 2 0251 JS000	Carbon 82 ohm 1/4W ±5%	1
R247	RD8 2 0251 JS000	Carbon 82 ohm 1/4W ±5%	1
R248	RD2 0 2251 JS000	Carbon 2.0 k ohm 1/4W ±5%	1
R249	RD5 6 0251 JS000	Carbon 56 ohm 1/4W ±5%	1
R250	RD3 3 3251 JS000	Carbon 33 k ohm 1/4W ±5%	1
R251	RD3 3 3251 JS000	Carbon 33 k ohm 1/4W ±5%	1
R252	RD3 3 3251 JS000	Carbon 33 k ohm 1/4W ±5%	1
R253	RD3 3 3251 JS000	Carbon 33 k ohm 1/4W ±5%	1
R254	RD3 3 3251 JS000	Carbon 33 k ohm 1/4W ±5%	1
R255	RD2 2 3251 JS000	Carbon 22 k ohm 1/4W ±5%	1
R257	RD1 2 3251 JS000	Carbon 12 k ohm 1/4W ±5%	1
R258	RD1 2 3251 JS000	Carbon 12 k ohm 1/4W ±5%	1
R259	RD2 2 3251 JS000	Carbon 22 k ohm 1/4W ±5%	1
R260	RD1 0 3251 JS000	Carbon 10 k ohm 1/4W ±5%	1
R261	RD2 7 4251 JS000	Carbon 270 k ohm 1/4W ±5%	1
R262	RD1 0 2251 JS000	Carbon 1 k ohm 1/4W ±5%	1
R263	RD4 7 2251 JS000	Carbon 4.7 k ohm 1/4W ±5%	1
R264	RD1 0 1251 JS000	Carbon 100 ohm 1/4W ±5%	1
R265	RD1 0 3251 JS000	Carbon 10 k ohm 1/4W ±5%	1
R267	RD3 3 3251 JS000	Carbon 33 k ohm 1/4W ±5%	1

Ref. No.	Part No.	Description	Q'ty
AMPLIFIER P.C.B. ASSY			
R268	RD3 3 3251 JS000	Carbon 33 k ohm 1/4W ±5%	1
R269	RD3 3 3251 JS000	Carbon 33 k ohm 1/4W ±5%	1
R270	RD3 3 3251 JS000	Carbon 33 k ohm 1/4W ±5%	1
R280	RD1 8 5251 JS000	Carbon 1.8M ohm 1/4W ±5%	1
R301	RD1 0 3251 JS000	Carbon 10 k ohm 1/4W ±5%	1
R302	RD1 2 4251 JS000	Carbon 120 k ohm 1/4W ±5%	1
R303	RD4 7 3251 JS000	Carbon 47 k ohm 1/4W ±5%	1
R304	RD1 8 3251 JS000	Carbon 18 k ohm 1/4W ±5%	1
R305	RD2 2 2251 JS000	Carbon 2.2 k ohm 1/4W ±5%	1
R306	RD1 0 3251 JS000	Carbon 10 k ohm 1/4W ±5%	1
R307	RD1 0 2251 JS000	Carbon 1 k ohm 1/4W ±5%	1
R308	RD1 0 2251 JS000	Carbon 1 k ohm 1/4W ±5%	1
R309	RD1 0 2251 JS000	Carbon 1 k ohm 1/4W ±5%	1
R310	RD1 0 2251 JS000	Carbon 1 k ohm 1/4W ±5%	1
R311	RD8 2 0251 JS000	Carbon 82 ohm 1/4W ±5%	1
R312	RD8 2 0251 JS000	Carbon 82 ohm 1/4W ±5%	1
R313	RD8 2 0251 JS000	Carbon 82 ohm 1/4W ±5%	1
R314	RD2 7 2251 JS000	Carbon 2.7 k ohm 1/4W ±5%	1
R315	RD3 3 1251 JS000	Carbon 330 ohm 1/4W ±5%	1
R316	RD3 9 2251 JS000	Carbon 3.9 k ohm 1/4W ±5%	1
R317	RD3 3 1251 JS000	Carbon 330 ohm 1/4W ±5%	1
R318	RD5 6 2251 JS000	Carbon 5.6 k ohm 1/4W ±5%	1
R319	RD3 3 1251 JS000	Carbon 330 ohm 1/4W ±5%	1
R320	RH5 6 1102 KH000	Metal 560 ohm 1W ±10%	1
R321	RH3 3 1102 KH000	Metal 330 ohm 1W ±10%	1
R322	RH1 2 1102 KH000	Metal 120 ohm 1W ±10%	1
R323	RD1 0 3251 JS000	Carbon 10 k ohm 1/4W ±5%	1
R324	RD2 2 3251 JS000	Carbon 22 k ohm 1/4W ±5%	1
R341	RD1 0 1251 JS000	Carbon 100 ohm 1/4W ±5%	1
R344	RD1 0 3251 JS000	Carbon 10 k ohm 1/4W ±5%	1
S1	4 2319 73901	Slide Switch (Record/Playback)	1
S2	4 2319 73740	Slide Switch Lever (Bias)	1
S3	4 2319 73511	Slide SwitchLever (EQ)	1
S4	4 2319 73740	Slide Switch Lever (Input Select)	1
S5	4 2319 73740	Slide Switch Lever (DOLBY NR)	1
VR1	4 2229 71765	Volume Control (Input Level, A-50k)	1
	141 2 4729 04700	Staple 10	46
	4 2369 70740	RT Pin	7
D101	4 2029 70700	Diode, WG1010A	1
D104	4 2029 70700	Diode, WG1010A	1
D105	4 2029 70700	Diode, WG1010A	1
D201	4 2029 70700	Diode, WG1010A	1
D204	4 2029 70700	Diode, WG1010A	1
D205	4 2029 70700	Diode, WG1010A	1
D303	4 2029 70700	Diode, WG1010A	1
Q101	4 2039 70101	Transistor, 2SC945	1
Q102	4 2039 70101	Transistor, 2SC945	1
Q103	4 2039 70101	Transistor, 2SC945	1
Q104	4 2039 70101	Transistor, 2SC945	1
Q105	4 2039 70101	Transistor, 2SC945	1
Q106	4 2039 70101	Transistor, 2SC945	1
Q107	4 2039 70101	Transistor, 2SC945	1
Q108	4 2039 70101	Transistor, 2SC945	1
Q109	4 2039 70101	Transistor, 2SC945	1
Q110	4 2039 70101	Transistor, 2SC945	1
Q111	4 2039 70101	Transistor, 2SC945	1
Q112	4 2039 70101	Transistor, 2SC945	1
Q113	4 2039 70101	Transistor, 2SC945	1
Q116	4 2039 70100	Transistor, 2SC945	1
Q201	4 2039 70101	Transistor, 2SC945	1
Q202	4 2039 70101	Transistor, 2SC945	1
Q203	4 2039 70101	Transistor, 2SC945	1
Q204	4 2039 70101	Transistor, 2SC945	1
Q205	4 2039 70101	Transistor, 2SC945	1
Q206	4 2039 70101	Transistor, 2SC945	1
Q207	4 2039 70101	Transistor, 2SC945	1
Q208	4 2039 70101	Transistor, 2SC945	1
Q209	4 2039 70101	Transistor, 2SC945	1
Q210	4 2039 70101	Transistor, 2SC945	1
Q211	4 2039 70101	Transistor, 2SC945	1

PARTS LIST (Continued)

Ref. No.	Part No.	Description	Q'ty
AMPLIFIER P.C.B. ASSY			
Q212	4 2039 70101	Transistor, 2SC945	1
Q213	4 2039 70101	Transistor, 2SC945	1
Q216	4 2039 70100	Transistor, 2SC945	1
Q301	4 2039 70101	Transistor, 2SC945	1
Q307	4 2039 70101	Transistor, 2SC945	1
Q308	4 2039 70101	Transistor, 2SC945	1
Q309	4 2039 70101	Transistor, 2SC945	1
Q310	4 2039 70101	Transistor, 2SC945	1
CONTROL CIRCUIT P.C.B. ASSY			
	4 1329 75180	Control Circuit P.C.B. Assy	1
C313	CC4 7 3500 KE00C	Ceramic 0.047 µF 50V ±10%	1
C314	CC4 7 3500 KE00C	Ceramic 0.047 µF 50V ±10%	1
C315	CC4 7 3500 KE00C	Ceramic 0.047 µF 50V ±10%	1
C316	CC4 7 3500 KE00C	Ceramic 0.047 µF 50V ±10%	1
C317	CD1 0 8500 0001V	Electrolytic 1000 µF 50V	1
C318	CD4 7 7350 0001V	Electrolytic 470 µF 35V	1
C319	CD2 2 8250 0001V	Electrolytic 2200 µF 25V	1
C320	CT1 0 6100 K00DV	Tantalum 10 µF 10V ±10%	1
C321	CD3 3 5350 0000V	Electrolytic 3.3 µF 35V	1
C322	CD1 0 5350 0000V	Electrolytic 1 µF 35V	1
C323	CC1 0 3500 KE00C	Ceramic 0.01 µF 50V ±10%	1
C325	CD4 7 5160 0000V	Electrolytic 4.7 µF 16V	1
D306	4 2029 70700	Diode, WG1010A	1
D307	4 2029 70700	Diode, WG1010A	1
D308	4 2029 70700	Diode, WG1010A	1
D309	4 2029 70700	Diode, WG1010A	1
D310	4 2029 70810	Diode, RD2.7EB	1
D311	4 2029 70420	Diode, RD6.8EB	1
D312	4 2029 70750	Diode, RD30E	1
D313	4 2029 70620	Bridge Diode	1
D314	4 2029 70620	Bridge Diode	1
Q302	203 5 7330 61251	Transistor, 2SD612	1
Q303	4 2039 70100	Transistor, 2SC945	1
Q304	4 2039 70100	Transistor, 2SC945	1
Q305	203 5 5100 53650	Transistor, 2SC536	1
Q306	4 2039 70450	Transistor, 2SC794	1
R325	RD4 7 A251 JS000	Carbon 4.7 ohm 1/4W ±5%	1
R326	RH1 0 1202 KH000	Metal 100 ohm 2W ±10%	1
R327	RD1 0 2251 JS000	Carbon 1 k ohm 1/4W ±5%	1
R328	RD2 2 0251 JS000	Carbon 22 ohm 1/4W ±5%	1
R329	RD1 5 3251 JS000	Carbon 15 k ohm 1/4W ±5%	1
R332	RD2 2 3251 JS000	Carbon 22 k ohm 1/4W ±5%	1
R333	RD1 0 3251 JS000	Carbon 10 k ohm 1/4W ±5%	1
R334	RD1 5 2251 JS000	Carbon 1.5 k ohm 1/4W ±5%	1
R335	RD3 3 3251 JS000	Carbon 33 k ohm 1/4W ±5%	1
R336	RD1 5 3251 JS000	Carbon 15 k ohm 1/4W ±5%	1
R337	RD1 8 0251 JS000	Carbon 18 ohm 1/4W ±5%	1
R338	RH3 3 1102 KH000	Metal 330 ohm 1W ±10%	1
R339	RD3 3 3251 JS000	Carbon 33 k ohm 1/4W ±5%	1
R340	RD1 0 2251 JS000	Carbon 1 k ohm 1/4W ±5%	1
R342	RD1 5 4251 JS000	Carbon 150 k ohm 1/4W ±5%	1
R343	RD3 9 2251 JS000	Carbon 3.9 k ohm 1/4W ±5%	1
R345	RH3 3 A102 KH000	Metal 3.3 ohm 1W ±10%	1
	4 2359 70910	Fuse Holder	4
F1	⚠ 4 2349 70040	Fuse (500 mA)	1
F2	⚠ 4 2349 70040	Fuse (500 mA)	1
MISCELLANEOUS			
D316	4 2029 70870	Diode, SLP-137B	1
D317	4 2029 70870	Diode, SLP-137B	1
D318	4 2029 70870	Diode, SLP-137B	1
D319	4 2029 70870	Diode, SLP-137B	1
	4 2269 31490	Transistor P.C.B.	1
	4 2269 32200	Microphone P.C.B.	1
	4 2269 32420	ASF L.E.D. P.C.B.	1
	4 2269 32450	Peak L.E.D. P.C.B.	1
CN1	4 2359 74290	Connector 6P Assy	1
CN2	4 2359 72983	Connector 3P Assy	1
R102	RD2 2 3251 JV000	Carbon 22 k ohm 1/4W ±5%	1

Ref. No.	Part No.	Description	Q'ty
MISCELLANEOUS			
R202	RD2 2 3251 JV000	Carbon 22 k ohm 1/4W ±5%	1
	201 2 5010 014011	Mica Sheet	1
MECHANISM			
	⚠ 4 2239 70490	Capacitor (C1)	1
	4 2269 32140	Lamp P.C.B.	2
S6	4 2319 72010	Leaf Switch (Motor)	1
S7	4 2319 73110	Leaf Switch (Muting)	1
S8	4 2319 72772	Leaf Switch (ASF)	1
S9	4 2319 72772	Leaf Switch (Record)	1
S10	4 2319 73410	Push Switch (Auto Search)	1
S11	4 2319 73411	Push Switch (Record Mute)	1
S12	⚠ 4 2319 73970	Power Switch (Power)	1
S13	⚠ 4 2319 72140	Slide Switch (Voltage Select)	1
	4 2319 73450	Leaf Switch	1
	4 2359 70880	Fuse Holder	4
J1	4 2359 73903	Jack 1P (Microphone, Left)	1
J2	4 2359 73903	Jack 1P (Microphone, Right)	1
J3	4 2359 73902	Jack 1P (Headphone)	1
	⚠ 4 2379 70560	Terminal	1
HD1	4 2429 71420	R/P Head	1
HD2	4 2429 71480	Erase Head	1
	⚠ 4 2439 70352	Power Cord	1
T301	⚠ 4 2519 72741	Power Transformer	1
SL1	4 2649 70231	Solenoid	1
	4 5279 70837	Motor	1
PL1	4 6129 70420	Lamp	1
PL2	4 6129 70420	Lamp	1
	141 0 3119 14509	Chassis Assy	1
	141 0 3169 04800	Chassis Bracket Assy	1
	141 0 3519 14901	Record Bracket Assy	1
	141 0 3519 15000	Sub Flywheel Bracket Assy	1
	141 0 3519 17700	Flywheel Support Assy	1
	141 0 5219 05100	Pulley Spindle Assy	1
	141 0 5219 05400	Flywheel Assy	1
	141 0 5419 02401	Pinch Roller Assy	1
	141 2 3529 26300	Spacer, Stop Lever	1
	141 2 3529 26400	Spacer, Lever	1
	141 2 4219 02900	Screw	1
	141 2 4539 20100	Washer Spring	1
	141 2 7419 62900	Stop Base Lever	1
	141 0 5519 05901	Friction Assy	1
	141 0 5519 06400	Eject Gear Assy	1
	141 0 7319 18901	Plate Assy	1
	141 0 7439 05400	Fast Wind Arm Assy	1
	141 0 7439 06300	Take-up Arm Assy	1
	141 2 1149 18701	Cabinet Compartment (Silver)	1
	141 2 1149 18700	Cabinet Compartment (Black)	1
	141 2 1149 20300	Panel Chassis	1
	141 2 1249 21400	Cassette Lid Frame	1
	141 2 1519 12201	Reflection	1
	141 2 1619 52203	Button Lever (Silver)	1
	141 2 1619 52207	Button Lever (Silver)	5
	141 2 1619 52201	Button Lever (Black)	6
	141 2 1619 62402	Reset Button (Silver)	1
	141 2 1619 62401	Reset Button (Black)	1
	141 2 1749 02500	Foot	4
	141 2 2149 13100	Cassette Lid Arm	1
	141 2 2149 13101	Cassette Lid Arm	1
	141 2 2149 13200	Cassette Lid Bracket	1
	141 2 2719 13300	Spacer, Handle	2
	141 2 3119 12101	Cabinet Chassis	1
	141 2 3519 40700	Timing Switch Bracket	1
	141 2 3529 17900	Spacer, Brake	1
	141 2 3529 18101	Spacer, Head	1
	141 2 3529 19100	Spacer, Base	1
	141 2 3529 19401	Spacer, Gear	1
	141 2 3529 19900	Spacer, Motor	2
	141 2 3529 20600	Spacer, Switch Plate	1
	141 2 3529 21900	Spacer, Erase Head	1

PARTS LIST (Continued)

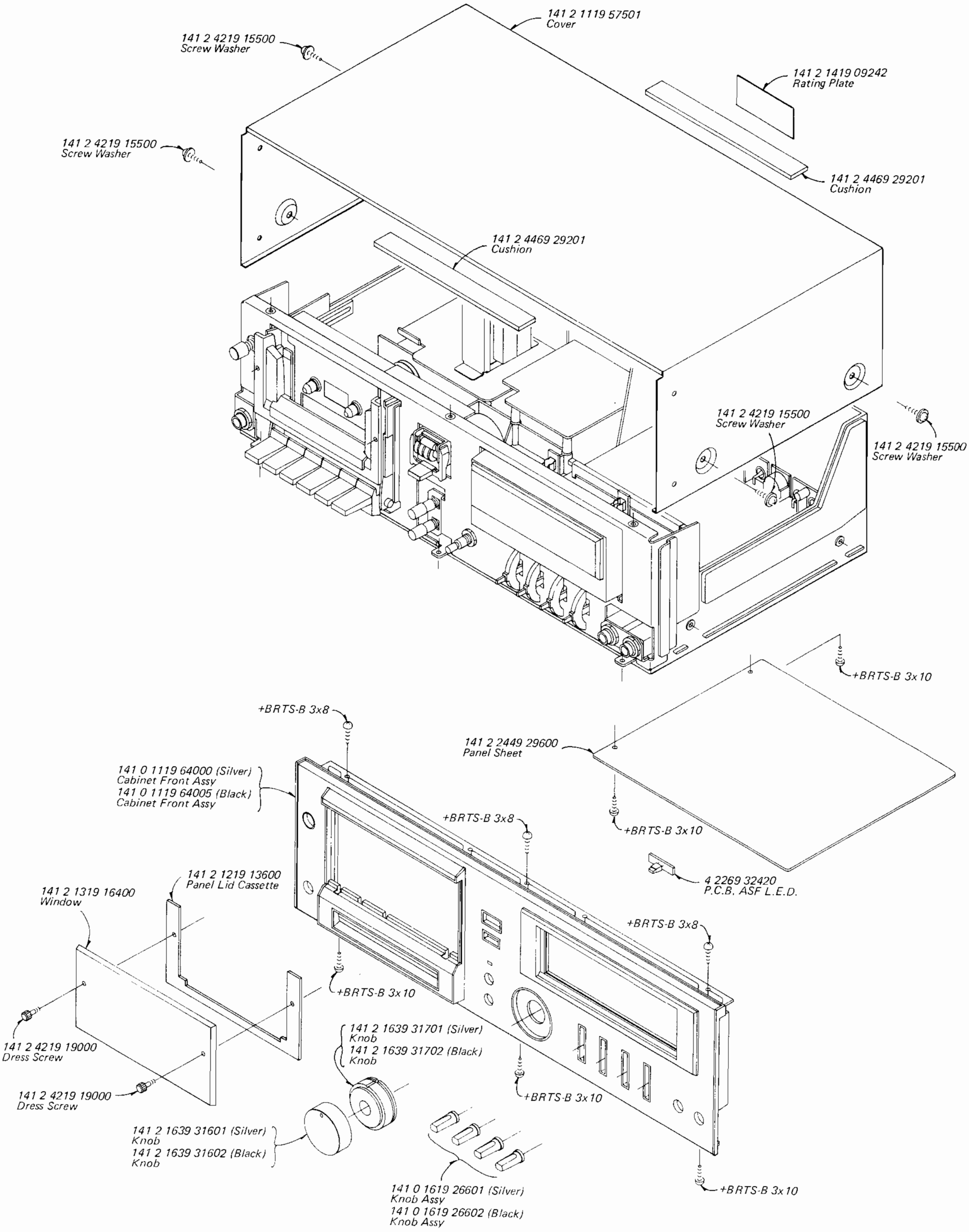
Ref. No.	Part No.	Description	Q'ty
MECHANISM			
	141 2 3719 04100	Transformer Bracket	1
	141 2 3899 06900	Clamp, Power Cord	1
	141 2 3899 08300	Cord Holder	1
	141 2 4219 04000	Screw	1
	141 2 4219 05400	Screw, Washer	3
	141 2 4219 09000	Screw	2
	141 2 4219 11600	Screw	2
	141 2 4219 12100	Screw, Washer	1
	141 2 4219 13200	Screw, Washer	5
	141 2 4359 16600	Insulator	1
	141 2 4359 22500	Capacitor Cover	1
	141 2 4359 23300	Lamp Cover	1
	141 2 4359 24200	L.E.D. Cover	1
	141 2 4459 11800	Motor Cushion	2
	141 2 4459 20501	Brake Cover	2
	141 2 4469 00500	Flywheel Thrust	1
	141 2 4469 21300	Cushion	2
	141 2 4469 32400	Cushion	3
	141 2 4539 12100	Washer, Spindle	1
	141 2 4539 15800	Washer	2
	141 2 4539 17600	Washer	1
	141 2 4539 18400	Washer	1
	141 2 4729 00200	Lug	1
	141 2 4729 04200	Lug	1
	141 2 5319 05100	Reel Gear	2
	141 2 5319 07000	Reel Fin	2
	141 2 5369 00400	Cap, Reel Plate	2
	141 2 5519 04400	Intermediate Pulley	1
	141 2 5519 22000	Take-up Gear	1
	141 2 5519 22300	Fase Wind Gear	2
	141 2 5519 22400	Rewind Gear	1
	141 2 5519 27200	Auto Shut-off Pulley	1
	141 2 5559 04500	Eject Gear Plate	1
	141 2 5619 01100	Plain Belt	1
	141 2 5649 11800	Take-up Belt	1
	141 2 5649 11900	Auto Shut-off Belt	1
	141 2 5649 12000	Pulley Belt	1
	141 2 5649 13700	Counter Belt	1
	141 2 6129 04500	Spindle, Button Lever	1
	141 2 6139 13101	Button Frame	1
	141 2 7149 03400	Brake	1
	141 2 7319 32200	Slide Base Plate	1
	141 2 7319 33000	Cassette Lid Lock Plate	1
	141 2 7319 33200	Lock Plate	1
	141 2 7319 34000	Pause Plate	1
	141 2 7319 35400	Switch Plate	1
	141 2 7319 37900	Head Plate	1
	141 2 7359 01900	Record Wire	1
	141 2 7419 48100	Fast Wind Lever	1
	141 2 7419 48300	Record Stop Lever	1
	141 2 7419 51000	Review Lever	1
	141 2 7419 51500	Record Lever	1
	141 2 7419 51600	Auto Shut-off Lever	1
	141 2 7419 51701	Stop Lever (Silver)	1
	141 2 7419 51700	Stop Lever (Black)	1
	141 2 7419 51900	Stop Eject Lever	1
	141 2 7419 53500	Record Link Lever	1
	141 2 7419 55900	Pause Lever	1
	141 2 7419 56100	ASF Lever	1
	141 2 7419 58100	Stopper Lever	1
	141 2 7419 58300	Cue Lever	1
	141 2 8119 07100	Counter	1
	141 2 8139 04900	Counter Bracket	1
	141 2 8219 24400	Chip, Cassette Lid Lock	1
	141 2 8419 09400	Interlock Lever	1
	141 2 8429 05400	Record Plate	1
	141 2 8519 03600	Spring, Shut-off Lever	1
	141 2 8519 19300	Spring, Brake	1
	141 2 8519 45900	Spring, Friction	1
	141 2 8519 67100	Spring, Fast Wind	1
	141 2 8519 67700	Spring, Pinch Roller	1
	141 2 8519 67900	Spring, Reel	1
	141 2 8519 68100	Spring, Pause	1
	141 2 8519 70100	Spring, Button Lever	3
	141 2 8519 70300	Spring, Pause Plate	2
	141 2 8519 70400	Spring, Slide Base Plate	1
	141 2 8519 70500	Spring, Record Plate	1
	141 2 8519 71700	Spring, Cassette Lid	1
	141 2 8519 71800	Spring, Interlock	1
	141 2 8519 71900	Spring, Take-up Arm	1
	141 2 8519 72000	Spring, Auto Shut-off	1
	141 2 8519 73400	Spring, Stop Lever	1
	141 2 8519 75300	Spring, Pause Lever	1
	141 2 8519 75500	Spring	2
	141 2 8519 78200	Spring, Switch Plate	1
	141 2 8519 78600	Spring, Slide Base	1
	141 2 8519 80400	Spring, Earth	1
	141 2 8519 80500	Spring, Record Lever	1
	141 2 8539 31000	Spring, Base	1
	141 2 8539 31300	Spring, Cassette	1
	141 2 8539 31400	Spring, Cassette	2
	141 2 8539 35800	Spring, Flywheel	1
	141 2 8539 36700	Spring, Earth	1
C324	CD2 2 7250 0001V	Electrolytic 220 µF 25V	1
	101 3 1302 00411	Screw, Pan Hd. +M2.0x4	1
	101 3 1302 00511	Screw, Pan Hd. +M2.0x5	2
	101 3 1302 00611	Screw, Pan Hd. +M2.0x6	4
	101 3 1302 60811	Screw, Pan Hd. +M2.6x8	3
	101 3 1303 00611	Screw, Pan Hd. +M3.0x6	1
	101 3 1303 01611	Screw, Pan Hd. +M3.0x16	3
	101 3 1702 00611	Screw, Bind Hd. +M2.0x6	1
	101 3 1702 00811	Screw, Bind Hd. +M2.0x8	2
	101 3 2502 00811	Screw, Cylinder Hd. -M2.0x8	1
	103 3 1302 00618	Screw, Pan Hd. Tapping-2 +M2.0x6	7
	103 3 1302 60511	Screw, Pan Hd. Tapping-2 +M2.6x5	2
	103 3 1302 60611	Screw, Pan Hd. Tapping-2 +M2.6x6	11
	103 3 1302 61011	Screw, Pan Hd. Tapping-2 +M2.6x10	1
	103 3 1302 61211	Screw, Pan Hd. Tapping-2 +M2.6x12	2
	103 3 1303 01018	Screw, Pan Hd. Tapping-2 +M3.0x10	2
	103 3 1702 00811	Screw, Bind Hd. Tapping-2 +M2.0x8	1
	103 3 1702 60811	Screw, Bind Hd. Tapping-2 +M2.6x8	3
	104 3 1702 00611	Screw, Bind Hd. Tapping-3 +M2.0x6	1
	110 3 3202 00082	Tooth Outer Washer-B M2.0	1
	110 3 9200 70034	Washer M2.0x7x0.3	2
	112 3 1301 50082	E Ring M1.5	1
	112 3 1302 00082	E Ring M2.0	2
	112 3 1302 50082	E Ring M2.5	3
	131 3 1303 00511	Screw, Pan Hd. C SW +M3.0x5	10
	143 3 1302 60811	Screw, Pan Hd. Tapping-B +M2.6x8	1
	143 3 1702 60818	Screw, Bind Hd. Tapping-B +M2.6x8	4
	143 3 1903 00811	Screw, Brazier Hd. Tapping-B +M3.0x8	11
	143 3 1903 01011	Screw, Brazier Hd. Tapping-B +M3.0x10	21
D315	202 5 2450 13510	Diode, DS135	1

NOTES:

1. Part orders must contain Model Number, Part Number and Description.
2. Ordering quantity of screws and/or resistors must be multiple of 10 pcs.

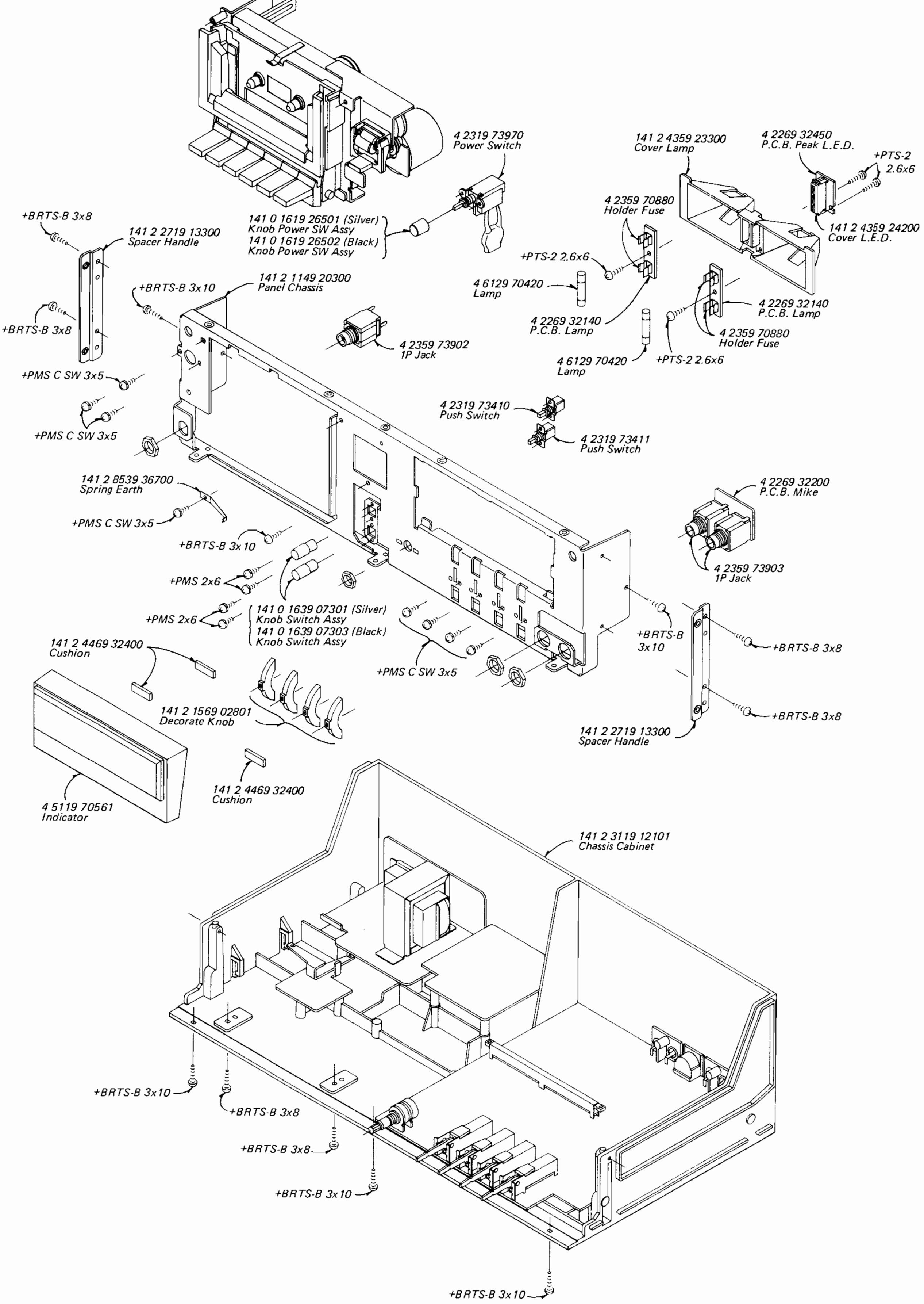
EXPLODED VIEW

(Cabinet)


141 2 1119 57501
Cover
141 2 4219 15500
Screw Washer
141 2 1419 09242
Rating Plate
141 2 4219 15500
Screw Washer
141 2 4469 29201
Cushion
141 2 4469 29201
Cushion
141 2 4219 15500
Screw Washer
141 2 4219 15500
Screw Washer
+BRTS-B 3x10
+BRTS-B 3x8
141 2 2449 29600
Panel Sheet
141 0 1119 64000 (Silver)
Cabinet Front Assy
141 0 1119 64005 (Black)
Cabinet Front Assy
+BRTS-B 3x8
+BRTS-B 3x10
4 2269 32420
P.C.B. ASF L.E.D.
141 2 1219 13600
Panel Lid Cassette
141 2 1319 16400
Window
+BRTS-B 3x8
+BRTS-B 3x10
141 2 1639 31701 (Silver)
Knob
141 2 1639 31702 (Black)
Knob
141 2 4219 19000
Dress Screw
+BRTS-B 3x10
141 2 4219 19000
Dress Screw
141 2 1639 31601 (Silver)
Knob
141 2 1639 31602 (Black)
Knob
141 0 1619 26601 (Silver)
Knob Assy
141 0 1619 26602 (Black)
Knob Assy
+BRTS-B 3x10

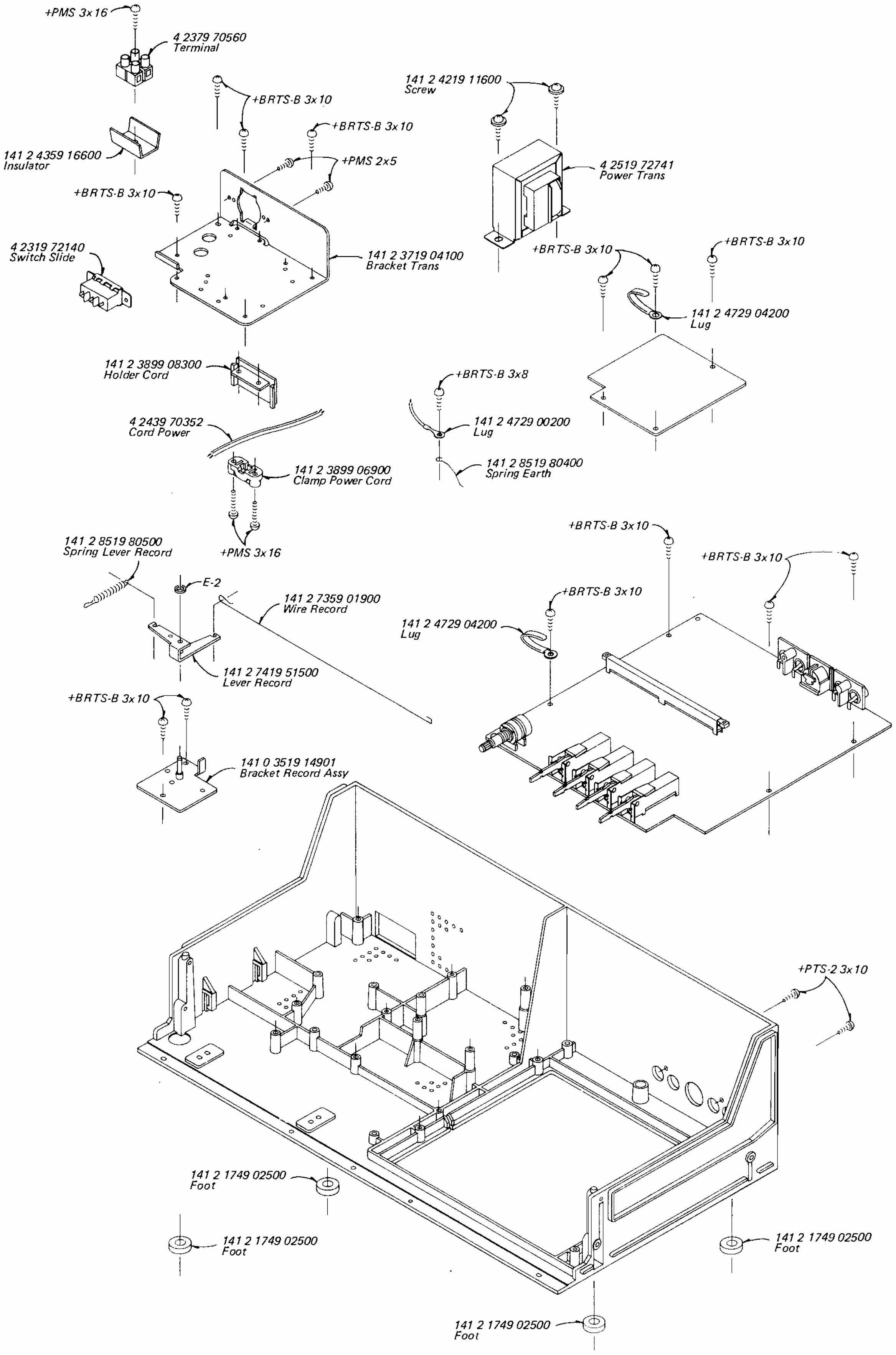
EXPLODED VIEW (Continued)

(Cabinet Chassis -1)


4 2319 73970
Power Switch
141 2 4359 23300
Cover Lamp
4 2269 32450
P.C.B. Peak L.E.D.
+PTS-2 2.6x6
+BRTS-B 3x8
141 2 2719 13300
Spacer Handle
141 0 1619 26501 (Silver)
Knob Power SW Assy
141 0 1619 26502 (Black)
Knob Power SW Assy
4 2359 70880
Holder Fuse
141 2 4359 24200
Cover L.E.D.
+PTS-2 2.6x6
+BRTS-B 3x10
141 2 1149 20300
Panel Chassis
4 6129 70420
Lamp
+BRTS-B 3x8
4 2269 32140
P.C.B. Lamp
4 2269 32140
P.C.B. Lamp
4 2359 73902
1P Jack
4 2359 70880
Holder Fuse
+PMS C SW 3x5
4 6129 70420
Lamp
+PTS-2 2.6x6
4 2319 73410
Push Switch
+PMS C SW 3x5
4 2319 73411
Push Switch
141 2 8539 36700
Spring Earth
4 2269 32200
P.C.B. Mike
+PMS C SW 3x5
+BRTS-B 3x10
4 2359 73903
1P Jack
+PMS 2x6
+PMS 2x6
141 0 1639 07301 (Silver)
Knob Switch Assy
141 0 1639 07303 (Black)
Knob Switch Assy
+BRTS-B 3x10
+BRTS-B 3x8
141 2 4469 32400
Cushion
+PMS C SW 3x5
141 2 1569 02801
Decorate Knob
+BRTS-B 3x8
141 2 2719 13300
Spacer Handle
4 5119 70561
Indicator
141 2 4469 32400
Cushion
141 2 3119 12101
Chassis Cabinet
+BRTS-B 3x10
+BRTS-B 3x8
+BRTS-B 3x8
+BRTS-B 3x10
+BRTS-B 3x10

EXPLODED VIEW (Continued)

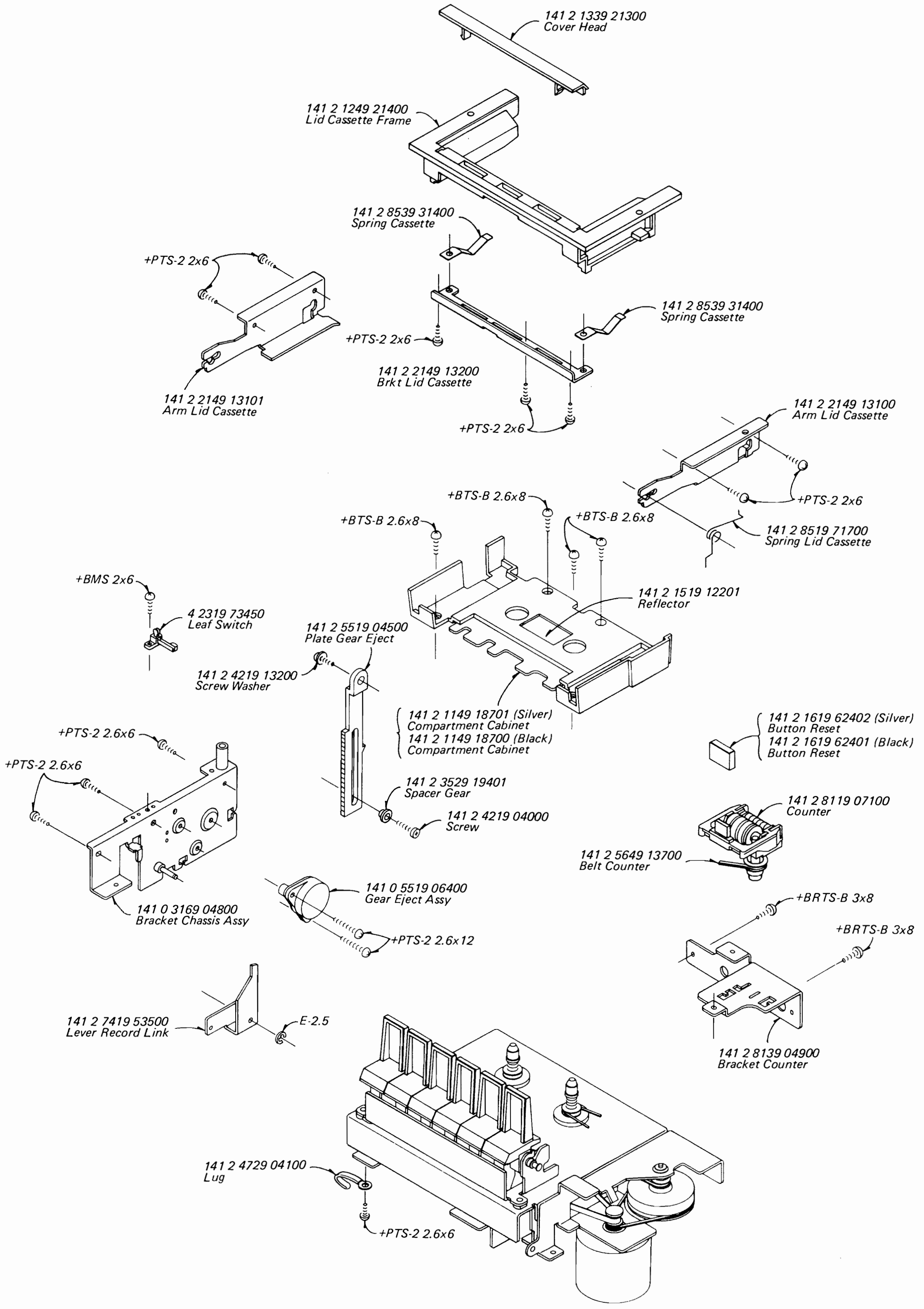
(Cabinet Chassis -2)



+PMS 3x16
4 2379 70560
Terminal
+BRTS-B 3x10
+BRTS-B 3x10
+PMS 2x5
141 2 4359 16600
Insulator
+BRTS-B 3x10
4 2319 72140
Switch Slide
141 2 3719 04100
Bracket Trans
141 2 4219 11600
Screw
4 2519 72741
Power Trans
+BRTS-B 3x10
+BRTS-B 3x10
141 2 4729 04200
Lug
141 2 3899 08300
Holder Cord
+BRTS-B 3x8
4 2439 70352
Cord Power
141 2 4729 00200
Lug
141 2 3899 06900
Clamp Power Cord
141 2 8519 80400
Spring Earth
141 2 8519 80500
Spring Lever Record
+PMS 3x16
+BRTS-B 3x10
+BRTS-B 3x10
E-2
141 2 7359 01900
Wire Record
+BRTS-B 3x10
141 2 4729 04200
Lug
141 2 7419 51500
Lever Record
+BRTS-B 3x10
141 0 3519 14901
Bracket Record Assy
+PTS-2 3x10
141 2 1749 02500
Foot
141 2 1749 02500
Foot
141 2 1749 02500
Foot
141 2 1749 02500
Foot

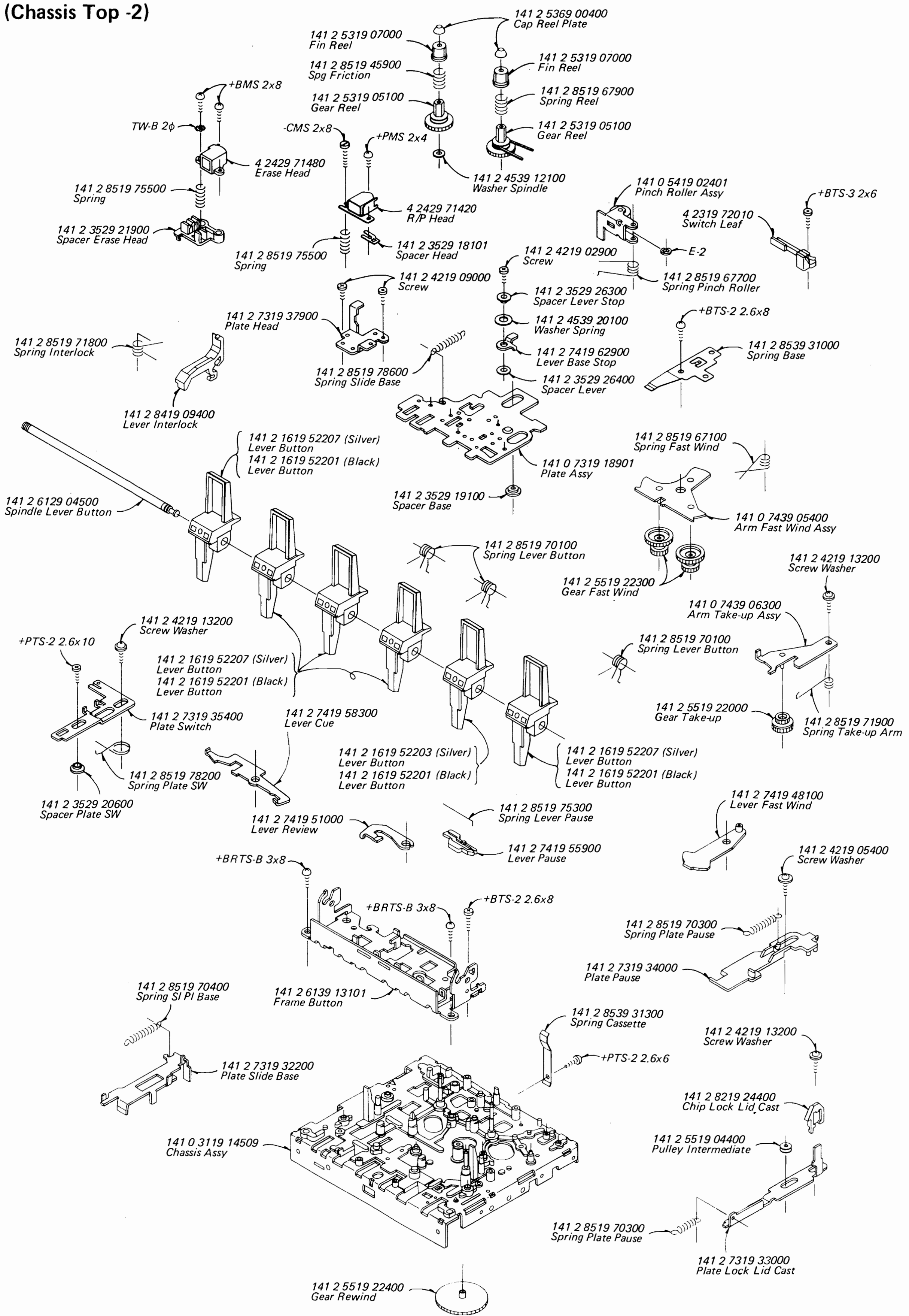
EXPLODED VIEW (Continued)

(Chassis Top -1)


141 2 1339 21300
Cover Head
141 2 1249 21400
Lid Cassette Frame
141 2 8539 31400
Spring Cassette
+PTS-2 2x6
141 2 8539 31400
Spring Cassette
+PTS-2 2x6
141 2 2149 13200
Brkt Lid Cassette
141 2 2149 13101
Arm Lid Cassette
+PTS-2 2x6
141 2 2149 13100
Arm Lid Cassette
+PTS-2 2x6
+BTS-B 2.6x8
+BTS-B 2.6x8
+BTS-B 2.6x8
141 2 8519 71700
Spring Lid Cassette
+BMS 2x6
4 2319 73450
Leaf Switch
141 2 1519 12201
Reflector
141 2 5519 04500
Plate Gear Eject
141 2 4219 13200
Screw Washer
141 2 1149 18701 (Silver)
Compartment Cabinet
141 2 1149 18700 (Black)
Compartment Cabinet
141 2 1619 62402 (Silver)
Button Reset
141 2 1619 62401 (Black)
Button Reset
+PTS-2 2.6x6
+PTS-2 2.6x6
141 2 3529 19401
Spacer Gear
141 2 4219 04000
Screw
141 2 8119 07100
Counter
141 2 5649 13700
Belt Counter
141 0 5519 06400
Gear Eject Assy
141 0 3169 04800
Bracket Chassis Assy
+PTS-2 2.6x12
+BRTS-B 3x8
+BRTS-B 3x8
141 2 7419 53500
Lever Record Link
E-2.5
141 2 8139 04900
Bracket Counter
141 2 4729 04100
Lug
+PTS-2 2.6x6

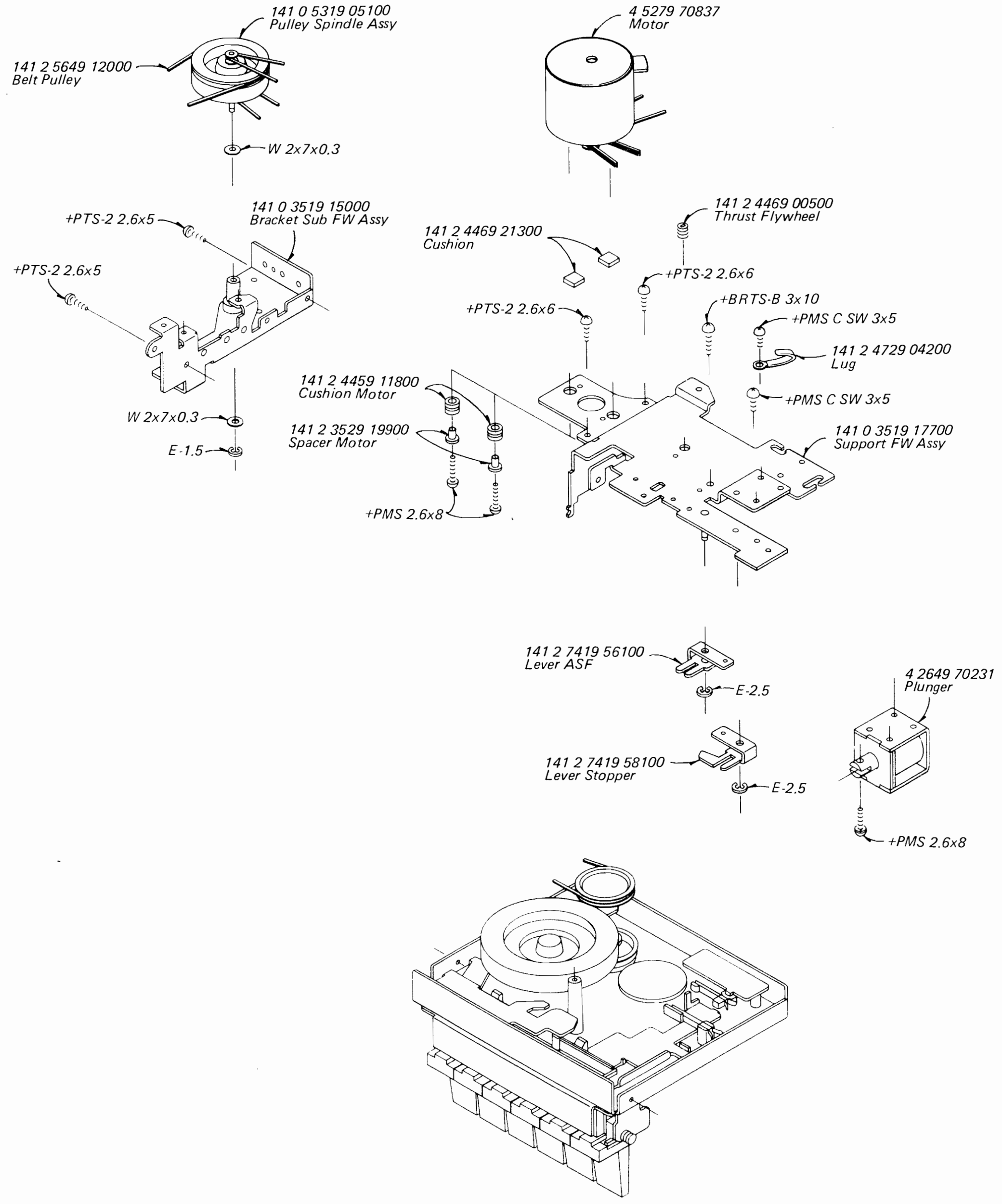
EXPLODED VIEW (Continued)

(Chassis Top -2)


141 2 5369 00400
Cap Reel Plate
141 2 5319 07000
Fin Reel
141 2 5319 07000
Fin Reel
141 2 8519 45900
Spg Friction
141 2 8519 67900
Spring Reel
+BMS 2x8
141 2 5319 05100
Gear Reel
141 2 5319 05100
Gear Reel
TW-B 2ϕ
-CMS 2x8
+PMS 2x4
4 2429 71480
Erase Head
141 2 4539 12100
Washer Spindle
141 2 8519 75500
Spring
141 0 5419 02401
Pinch Roller Assy
+BTS-3 2x6
4 2429 71420
R/P Head
4 2319 72010
Switch Leaf
141 2 3529 21900
Spacer Erase Head
141 2 3529 18101
Spacer Head
141 2 4219 02900
Screw
E-2
141 2 8519 75500
Spring
141 2 4219 09000
Screw
141 2 8519 67700
Spring Pinch Roller
141 2 3529 26300
Spacer Lever Stop
141 2 7319 37900
Plate Head
141 2 4539 20100
Washer Spring
+BTS-2 2.6x8
141 2 8519 71800
Spring Interlock
141 2 7419 62900
Lever Base Stop
141 2 8539 31000
Spring Base
141 2 8519 78600
Spring Slide Base
141 2 3529 26400
Spacer Lever
141 2 8419 09400
Lever Interlock
141 2 1619 52207 (Silver)
Lever Button
141 2 1619 52201 (Black)
Lever Button
141 2 8519 67100
Spring Fast Wind
141 0 7319 18901
Plate Assy
141 2 6129 04500
Spindle Lever Button
141 2 3529 19100
Spacer Base
141 0 7439 05400
Arm Fast Wind Assy
141 2 8519 70100
Spring Lever Button
141 2 4219 13200
Screw Washer
141 2 5519 22300
Gear Fast Wind
141 0 7439 06300
Arm Take-up Assy
141 2 4219 13200
Screw Washer
+PTS-2 2.6x10
141 2 8519 70100
Spring Lever Button
141 2 1619 52207 (Silver)
Lever Button
141 2 1619 52201 (Black)
Lever Button
141 2 5519 22000
Gear Take-up
141 2 7319 35400
Plate Switch
141 2 7419 58300
Lever Cue
141 2 8519 71900
Spring Take-up Arm
141 2 1619 52203 (Silver)
Lever Button
141 2 1619 52201 (Black)
Lever Button
141 2 1619 52207 (Silver)
Lever Button
141 2 1619 52201 (Black)
Lever Button
141 2 8519 78200
Spring Plate SW
141 2 3529 20600
Spacer Plate SW
141 2 8519 75300
Spring Lever Pause
141 2 7419 48100
Lever Fast Wind
141 2 7419 51000
Lever Review
141 2 7419 55900
Lever Pause
141 2 4219 05400
Screw Washer
+BRTS-B 3x8
+BRTS-B 3x8
+BTS-2 2.6x8
141 2 8519 70300
Spring Plate Pause
141 2 7319 34000
Plate Pause
141 2 8519 70400
Spring Sl Pl Base
141 2 6139 13101
Frame Button
141 2 8539 31300
Spring Cassette
+PTS-2 2.6x6
141 2 4219 13200
Screw Washer
141 2 7319 32200
Plate Slide Base
141 2 8219 24400
Chip Lock Lid Cast
141 2 5519 04400
Pulley Intermediate
141 0 3119 14509
Chassis Assy
141 2 8519 70300
Spring Plate Pause
141 2 7319 33000
Plate Lock Lid Cast
141 2 5519 22400
Gear Rewind

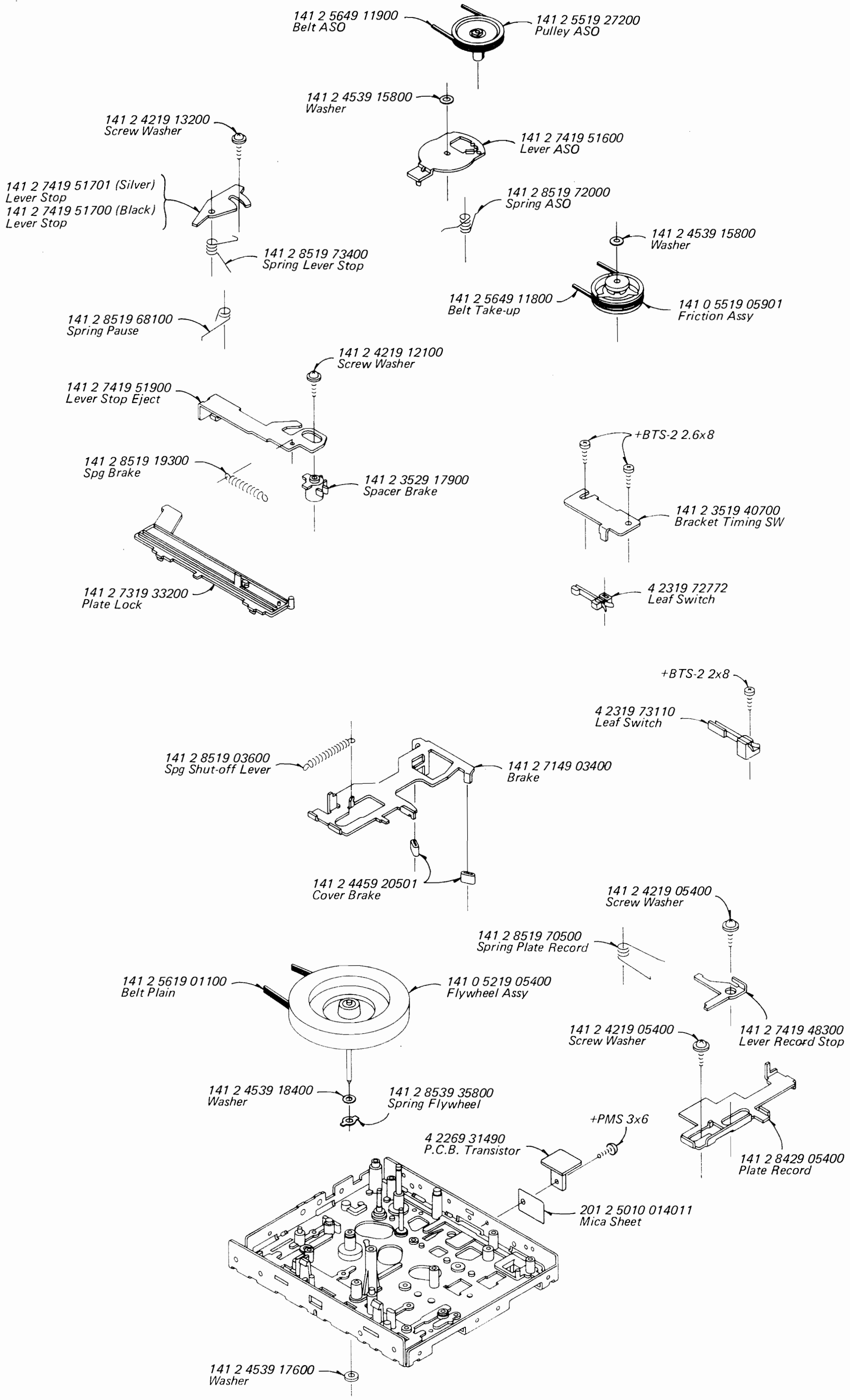
EXPLODED VIEW (Continued)

(Chassis Bottom -1)

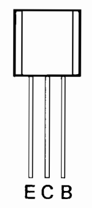
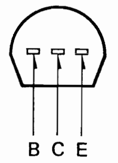
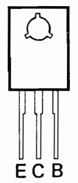
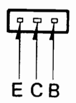

141 0 5319 05100
Pulley Spindle Assy
141 2 5649 12000
Belt Pulley
W 2x7x0.3
4 5279 70837
Motor
+PTS-2 2.6x5
141 0 3519 15000
Bracket Sub FW Assy
+PTS-2 2.6x5
141 2 4469 21300
Cushion
141 2 4469 00500
Thrust Flywheel
+PTS-2 2.6x6
+PTS-2 2.6x6
+BRTS-B 3x10
+PMS C SW 3x5
141 2 4729 04200
Lug
+PMS C SW 3x5
141 2 4459 11800
Cushion Motor
141 2 3529 19900
Spacer Motor
W 2x7x0.3
E-1.5
141 0 3519 17700
Support FW Assy
+PMS 2.6x8
141 2 7419 56100
Lever ASF
E-2.5
4 2649 70231
Plunger
141 2 7419 58100
Lever Stopper
E-2.5
+PMS 2.6x8

EXPLODED VIEW (Continued)

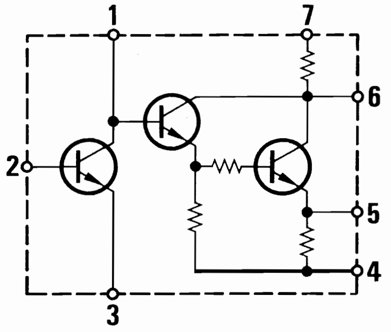
(Chassis Bottom -2)


141 2 5649 11900
Belt ASO
141 2 5519 27200
Pulley ASO
141 2 4539 15800
Washer
141 2 4219 13200
Screw Washer
141 2 7419 51600
Lever ASO
141 2 7419 51701 (Silver)
Lever Stop
141 2 7419 51700 (Black)
Lever Stop
141 2 8519 72000
Spring ASO
141 2 4539 15800
Washer
141 2 8519 73400
Spring Lever Stop
141 2 5649 11800
Belt Take-up
141 0 5519 05901
Friction Assy
141 2 8519 68100
Spring Pause
141 2 4219 12100
Screw Washer
141 2 7419 51900
Lever Stop Eject
+BTS-2 2.6x8
141 2 8519 19300
Spg Brake
141 2 3529 17900
Spacer Brake
141 2 3519 40700
Bracket Timing SW
141 2 7319 33200
Plate Lock
4 2319 72772
Leaf Switch
+BTS-2 2x8
4 2319 73110
Leaf Switch
141 2 8519 03600
Spg Shut-off Lever
141 2 7149 03400
Brake
141 2 4459 20501
Cover Brake
141 2 4219 05400
Screw Washer
141 2 8519 70500
Spring Plate Record
141 2 5619 01100
Belt Plain
141 0 5219 05400
Flywheel Assy
141 2 4219 05400
Screw Washer
141 2 7419 48300
Lever Record Stop
141 2 4539 18400
Washer
141 2 8539 35800
Spring Flywheel
+PMS 3x6
4 2269 31490
P.C.B. Transistor
141 2 8429 05400
Plate Record
201 2 5010 014011
Mica Sheet
141 2 4539 17600
Washer

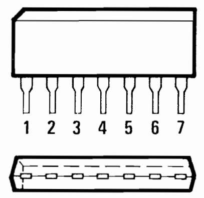
IC & TRANSISTOR LEAD IDENTIFICATION

FRONT VIEW	BOTTOM VIEW	TRANSISTOR
 E C B	 B C E	2SC536 2SC945
 E C B	 E C B	2SD612K 2SD794A
TERMINAL NAME		
B⇒ BASE C⇒ COLLECTOR E⇒ EMITTER		

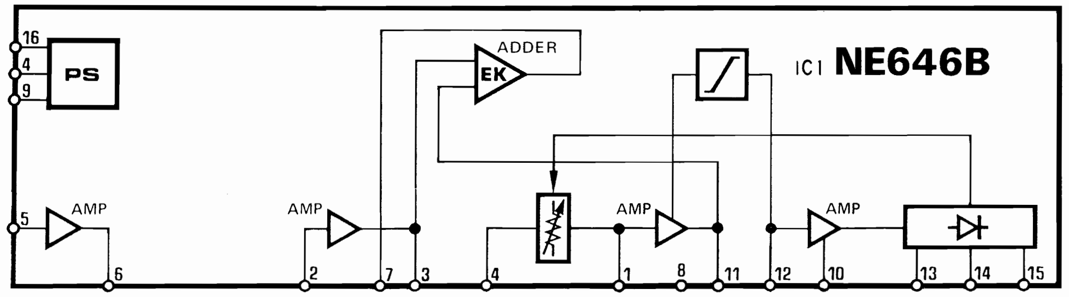
IC TA7129P EQUIVALENT CIRCUIT



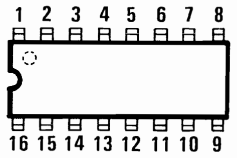
IC TA7129P FRONT & BOTTOM VIEWS



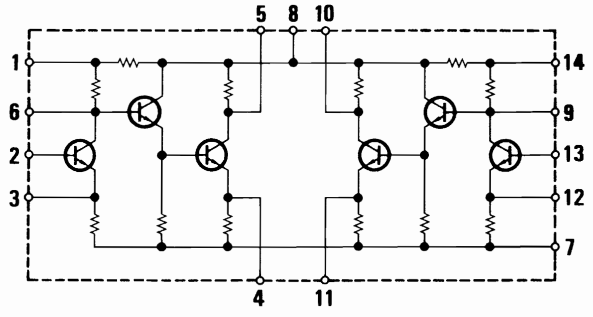
IC NE646B EQUIVALENT CIRCUIT


16
4
9
PS
ADDER
EK
IC1 NE646B
AMP
AMP
AMP
AMP
5
6
2
7
3
4
1
8
11
12
10
13
14
15

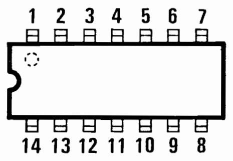
IC NE646B BOTTOM VIEW


1 2 3 4 5 6 7 8
16 15 14 13 12 11 10 9

IC LA3122 EQUIVALENT CIRCUIT

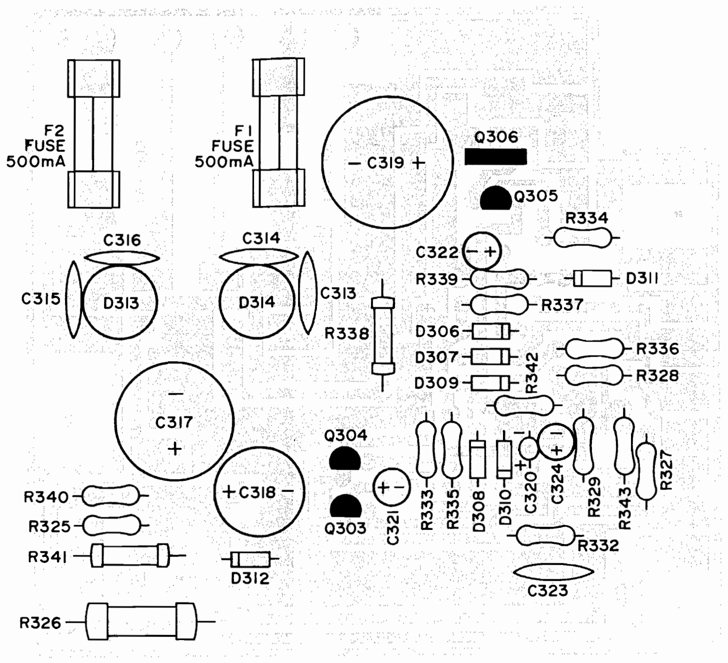

5 8 10
1
6
2
3
14
9
13
12
7
4 11

IC LA3122 BOTTOM VIEW

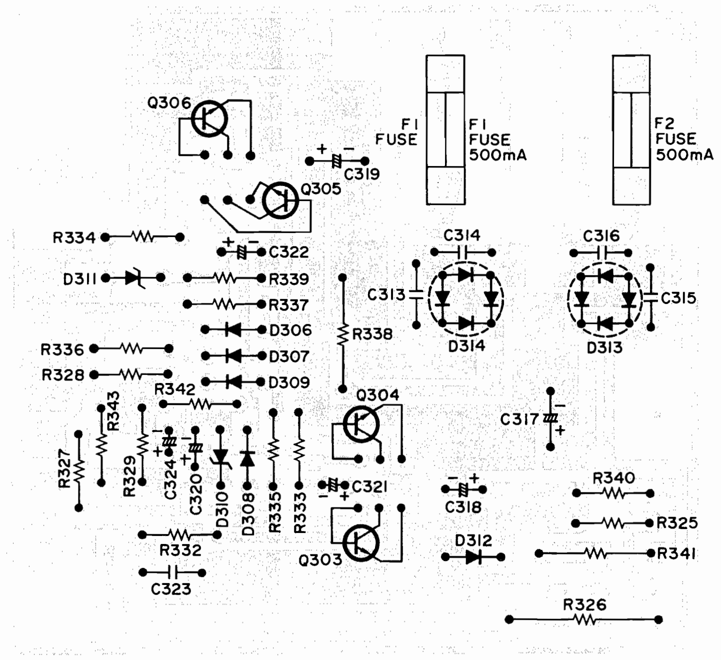

1 2 3 4 5 6 7
14 13 12 11 10 9 8

CONTROL CIRCUIT P.C.BOARD

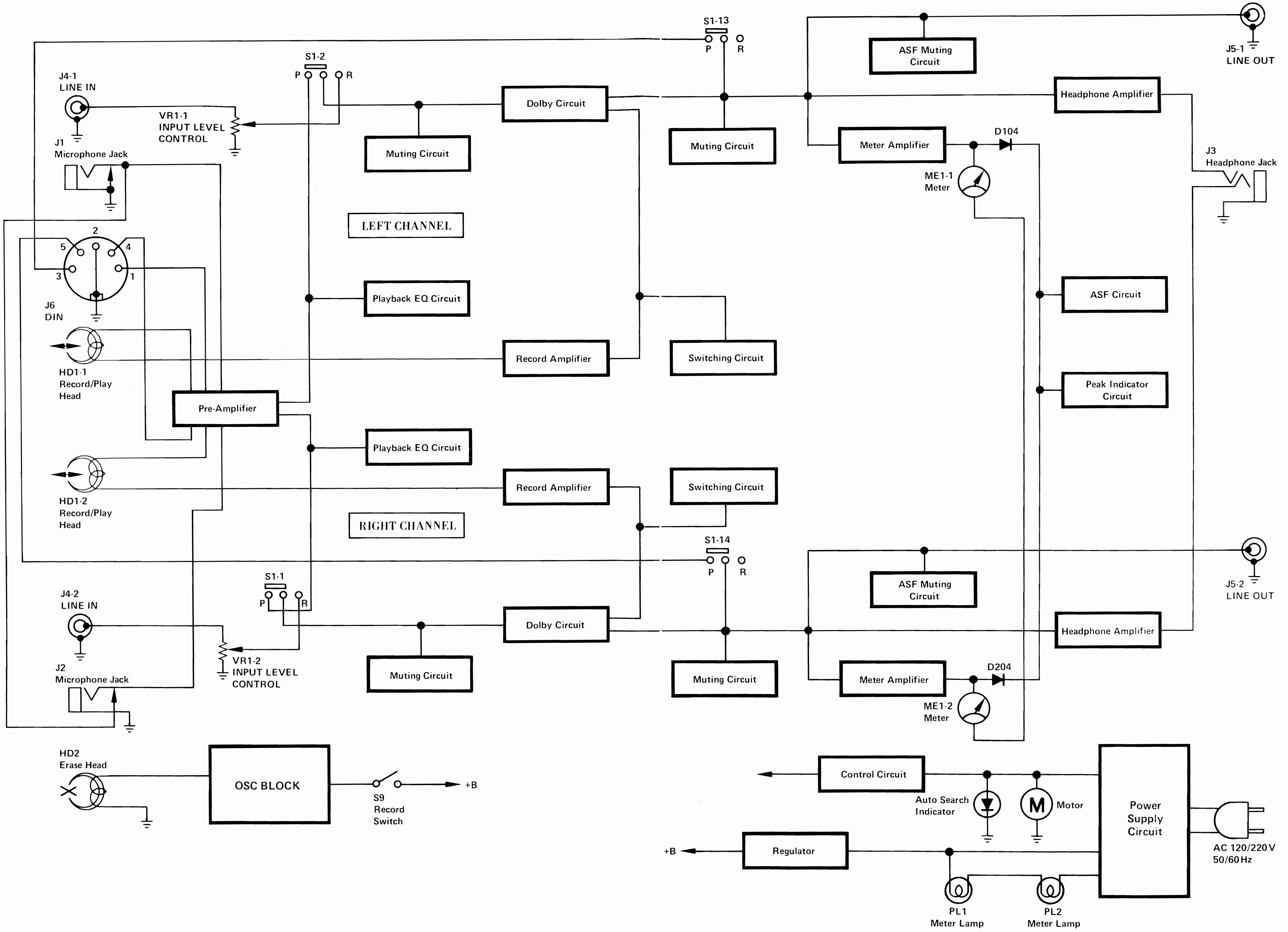
(Top View)


F2 FUSE 500mA
F1 FUSE 500mA
C319
Q306
Q305
R334
C316
C314
C322
R339
D311
C315
D313
D314
C313
R337
R338
D306
D307
D309
R342
R336
R328
C317
Q304
R340
R325
R341
C318
Q303
C321
R333
R335
D308
D310
C320
C324
R329
R343
R327
R332
D312
C323
R326

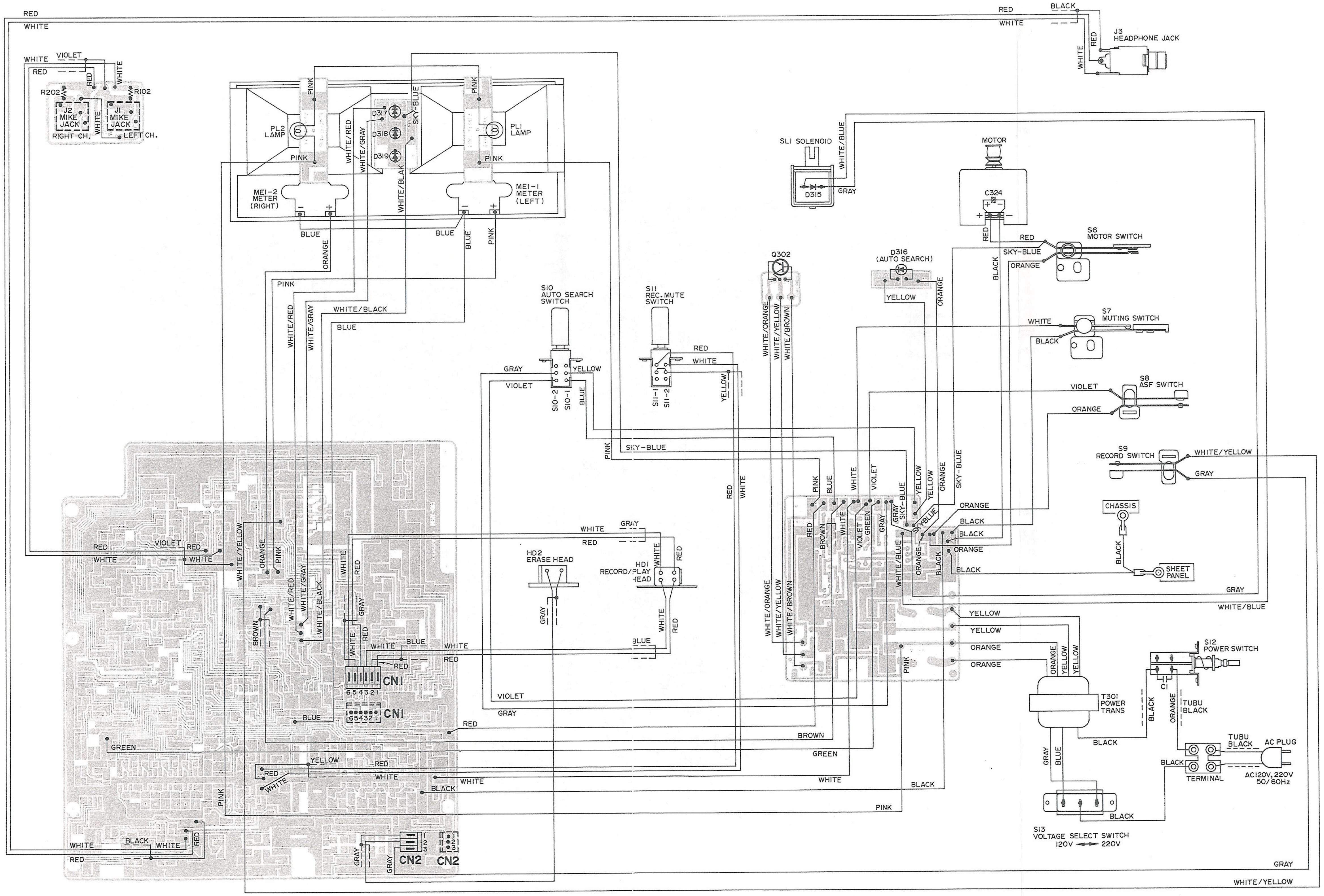
(Bottom View)


Q306
F1 FUSE
F1 FUSE 500mA
F2 FUSE 500mA
C319
Q305
R334
C322
C314
C316
D311
R339
R337
C313
C315
D306
R338
D314
D313
R336
D307
R328
D309
R342
Q304
R343
C317
R327
R329
C324
C320
D310
D308
R335
R333
C321
C318
R340
R325
D312
R341
R332
Q303
C323
R326

BLOCK DIAGRAM

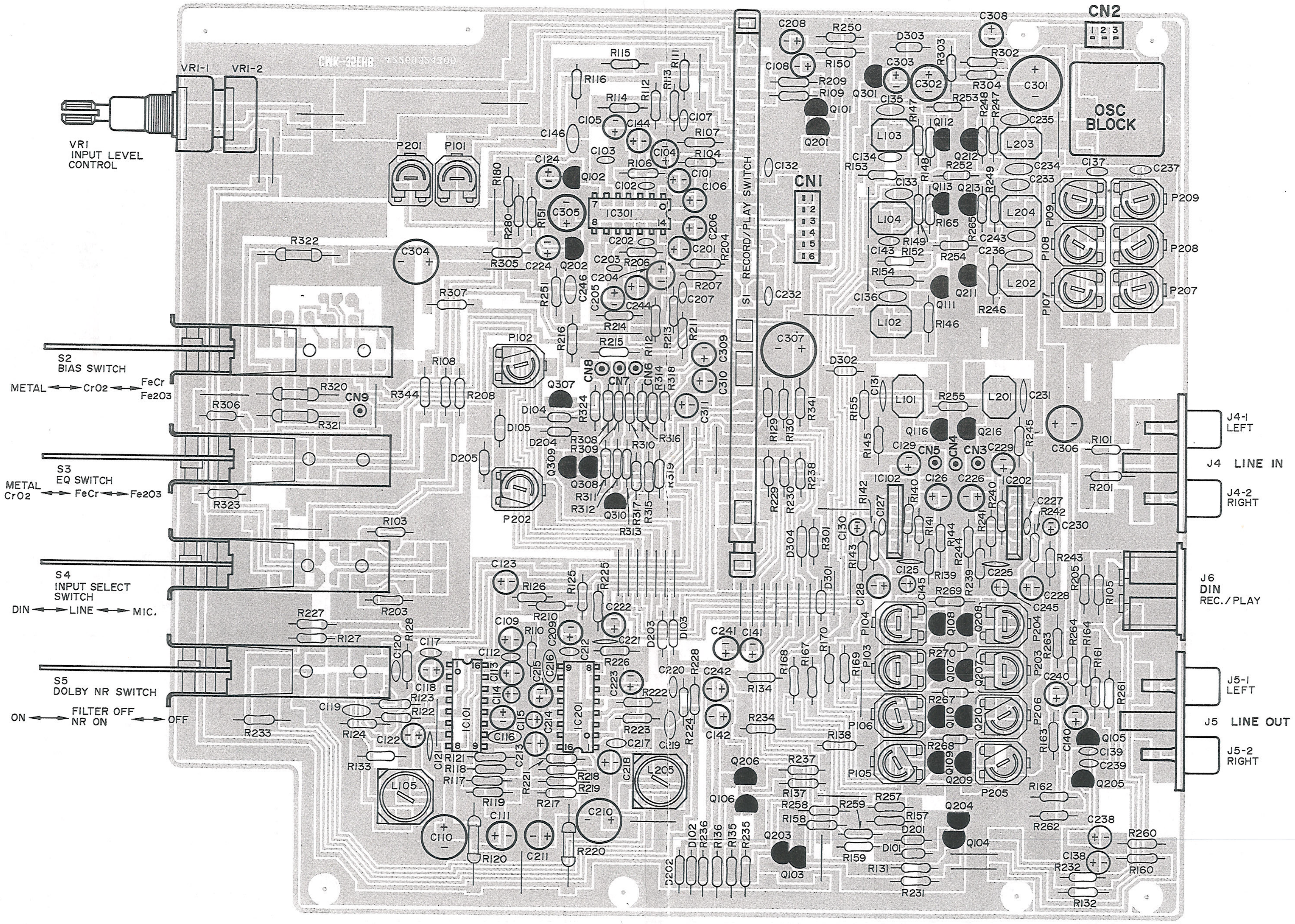

S1-13
P
R
S1-2
P
R
J4-1
LINE IN
VR1-1
INPUT LEVEL
CONTROL
J1
Microphone Jack
Dolby Circuit
Muting Circuit
Muting Circuit
ASF Muting
Circuit
J5-1
LINE OUT
Headphone Amplifier
Meter Amplifier
D104
ME1-1
Meter
J3
Headphone Jack
LEFT CHANNEL
2
5
4
3
1
J6
DIN
Playback EQ Circuit
ASF Circuit
HD1-1
Record/Play
Head
Record Amplifier
Switching Circuit
Peak Indicator
Circuit
Pre-Amplifier
Playback EQ Circuit
HD1-2
Record/Play
Head
Record Amplifier
Switching Circuit
RIGHT CHANNEL
S1-14
P
R
J4-2
LINE IN
S1-1
P
R
ASF Muting
Circuit
J5-2
LINE OUT
Dolby Circuit
Headphone Amplifier
VR1-2
INPUT LEVEL
CONTROL
J2
Microphone Jack
Muting Circuit
Muting Circuit
Meter Amplifier
D204
ME1-2
Meter
HD2
Erase Head
OSC BLOCK
+B
S9
Record
Switch
Control Circuit
Auto Search
Indicator
M
Motor
Power
Supply
Circuit
AC 120/220V
50/60Hz
+B
Regulator
PL1
Meter Lamp
PL2
Meter Lamp

WIRING DIAGRAM

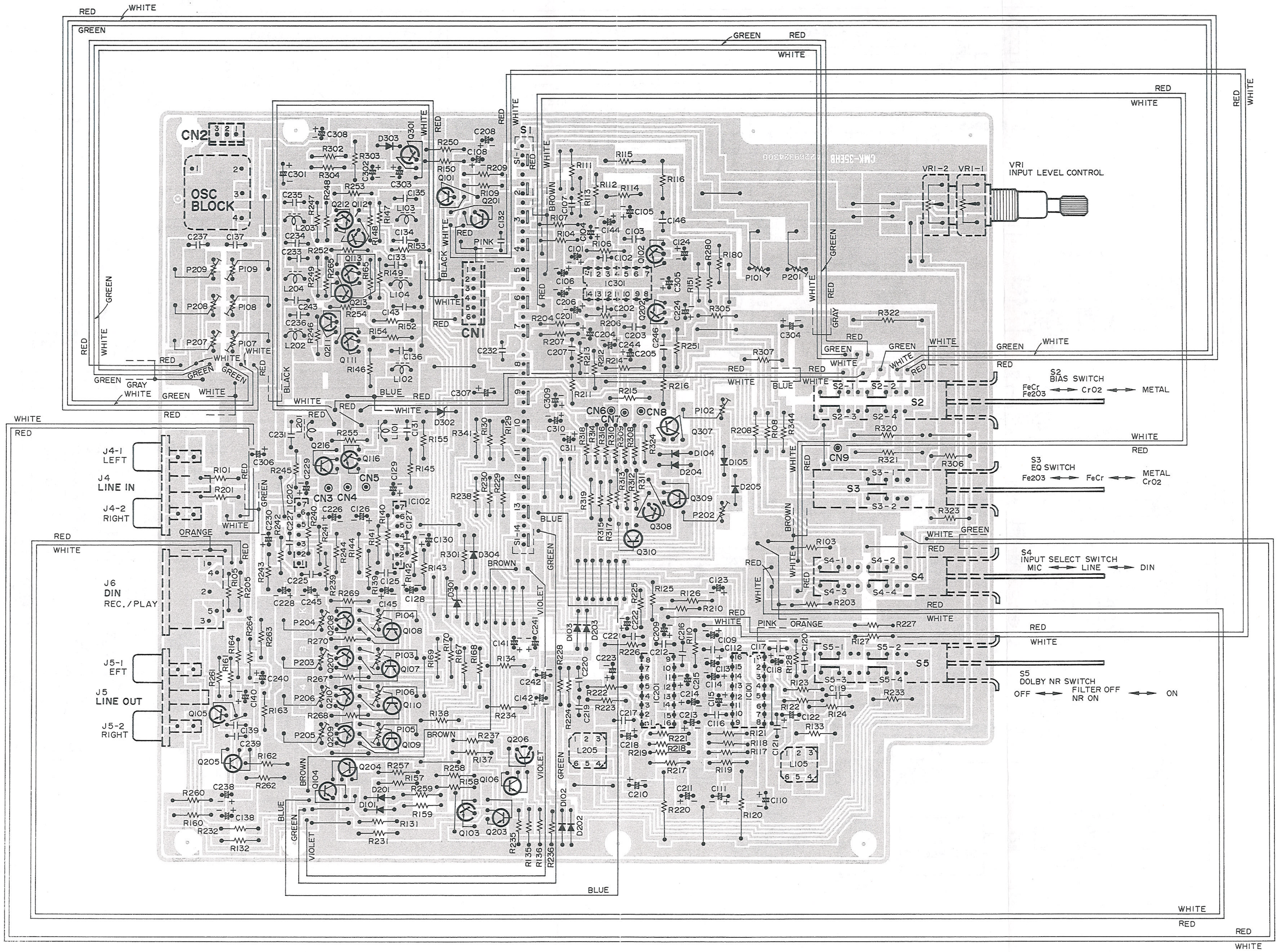


J3
HEADPHONE JACK
R202
R102
J2
MIKE
JACK
RIGHT CH.
J1
MIKE
JACK
LEFT CH.
PL2
LAMP
PL1
LAMP
D317
D318
D319
ME1-2
METER
(RIGHT)
ME1-1
METER
(LEFT)
SL1 SOLENOID
D315
MOTOR
C324
S6
MOTOR SWITCH
Q302
D316
(AUTO SEARCH)
S10
AUTO SEARCH
SWITCH
S10-2
S10-1
S11
REC. MUTE
SWITCH
S11-1
S11-2
S7
MUTING SWITCH
S8
ASF SWITCH
S9
RECORD SWITCH
CHASSIS
SHEET
PANEL
HD2
ERASE HEAD
HD1
RECORD/PLAY
HEAD
CN1
CN2
S12
POWER SWITCH
C1
T301
POWER
TRANS
TUBU
BLACK
AC PLUG
TERMINAL
AC120V, 220V
50/60Hz
S13
VOLTAGE SELECT SWITCH
120V ◄—► 220V
RED
WHITE
BLACK
VIOLET
PINK
BLUE
ORANGE
WHITE/RED
WHITE/GRAY
WHITE/BLACK
SKY-BLUE
GRAY
YELLOW
BROWN
GREEN
WHITE/BLUE
WHITE/YELLOW
WHITE/ORANGE
WHITE/BROWN

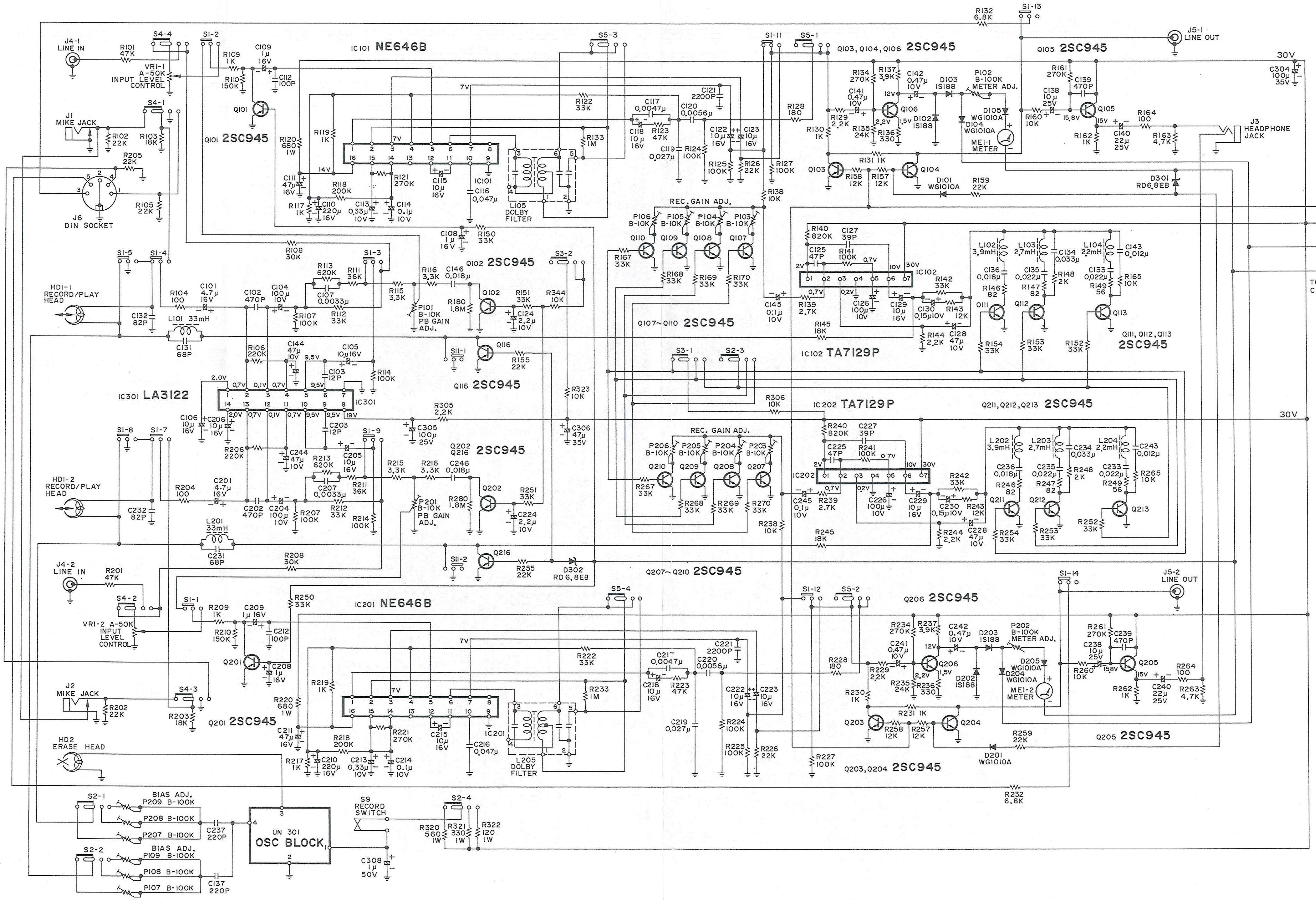
AMPLIFIER BASE P.C.BOARD (Top View)


VRI-1
VRI-2
VRI
INPUT LEVEL
CONTROL
S2
BIAS SWITCH
METAL ◄—► CrO2 ◄—► FeCr Fe2O3
S3
EQ SWITCH
METAL CrO2 ◄—► FeCr ◄—► Fe2O3
S4
INPUT SELECT
SWITCH
DIN ◄—► LINE ◄—► MIC.
S5
DOLBY NR SWITCH
ON ◄—► FILTER OFF NR ON ◄—► OFF
S1 RECORD/PLAY SWITCH
CN1
CN2
CN3
CN4
CN5
CN6
CN7
CN8
CN9
OSC BLOCK
IC101
IC201
IC301
J4-1 LEFT
J4 LINE IN
J4-2 RIGHT
J6 DIN REC./PLAY
J5-1 LEFT
J5 LINE OUT
J5-2 RIGHT
P101
P102
P201
P202
P203
P204
P205
P206
P207
P208
P209
L101
L102
L103
L104
L105
L201
L202
L203
L204
L205
C301
C304
C305
C307

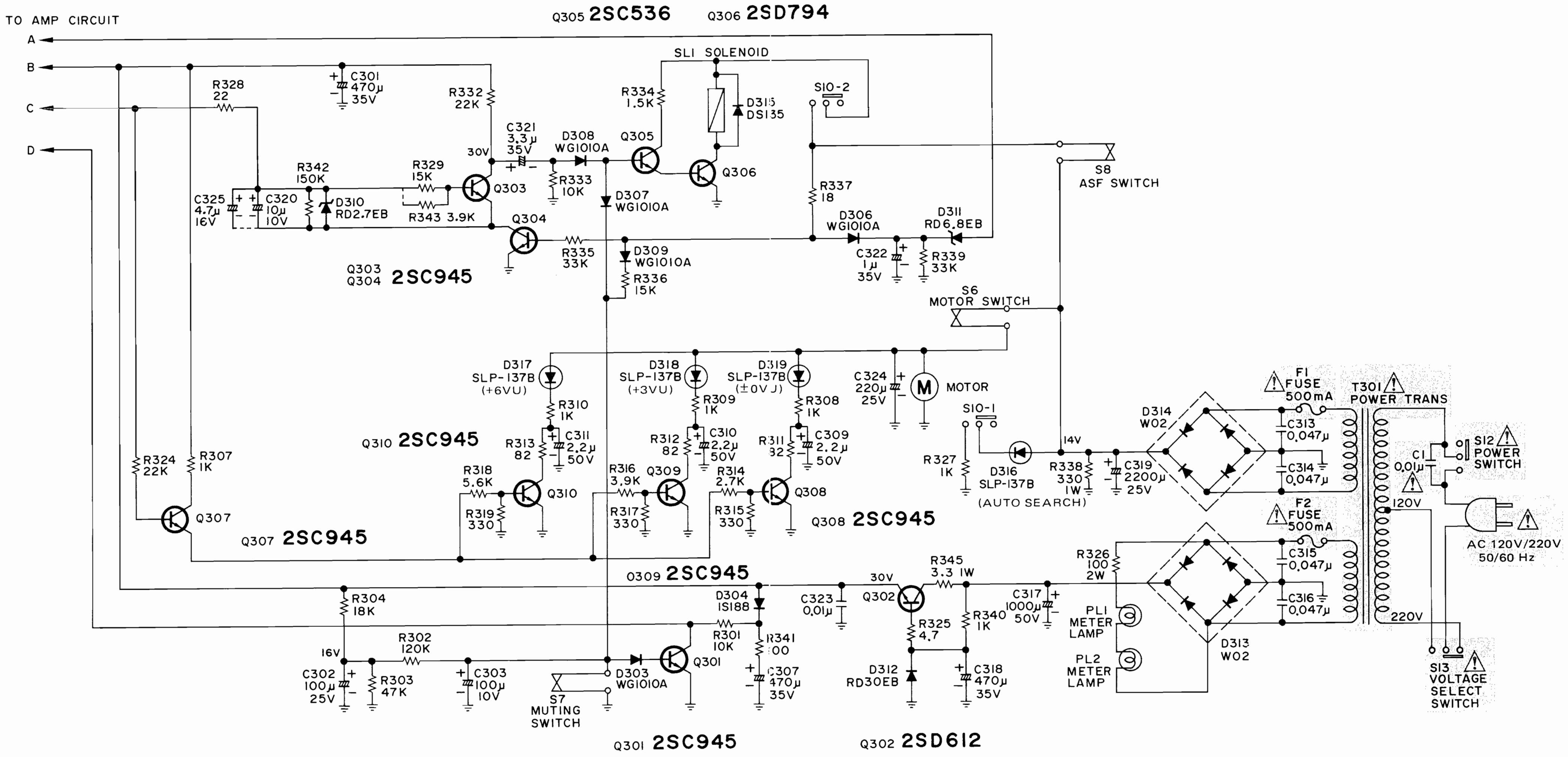
AMPLIFIER BASE P.C.BOARD(Bottom View)


CN2
OSC BLOCK
CN1
CN3 CN4
CN5
CN6 CN7 CN8
CN9
S1
IC301
VR1-2 VR1-1
VR1
INPUT LEVEL CONTROL
S2
BIAS SWITCH
FeCr Fe2O3 ◄► CrO2 ◄► METAL
S3
EQ SWITCH
Fe2O3 ◄► FeCr ◄► METAL CrO2
S4
INPUT SELECT SWITCH
MIC ◄► LINE ◄► DIN
S5
DOLBY NR SWITCH
OFF ◄► FILTER OFF NR ON ◄► ON
J4-1 LEFT
J4 LINE IN
J4-2 RIGHT
J6 DIN REC./PLAY
J5-1 LEFT
J5 LINE OUT
J5-2 RIGHT
L205
L105
CMK-35EHB
RED
WHITE
GREEN
GRAY
BLACK
BROWN
BLUE
PINK
ORANGE
VIOLET

SCHEMATIC DIAGRAM (Amplifier)


IC101 NE646B
IC201 NE646B
IC301 LA3122
IC102 TA7129P
IC202 TA7129P
Q101 2SC945
Q201 2SC945
Q102 2SC945
Q116 2SC945
Q202 Q216 2SC945
Q103, Q104, Q106 2SC945
Q105 2SC945
Q107~Q110 2SC945
Q207~Q210 2SC945
Q111, Q112, Q113 2SC945
Q211, Q212, Q213 2SC945
Q206 2SC945
Q205 2SC945
Q203, Q204 2SC945
J4-1 LINE IN
J4-2 LINE IN
J1 MIKE JACK
J2 MIKE JACK
J6 DIN SOCKET
HD1-1 RECORD/PLAY HEAD
HD1-2 RECORD/PLAY HEAD
HD2 ERASE HEAD
VR1-1 A-50K INPUT LEVEL CONTROL
VR1-2 A-50K INPUT LEVEL CONTROL
J5-1 LINE OUT
J5-2 LINE OUT
J3 HEADPHONE JACK
ME1-1 METER
ME1-2 METER
P102 B-100K METER ADJ.
P202 B-100K METER ADJ.
P101 B-10K PB GAIN ADJ.
P201 B-10K PB GAIN ADJ.
REC. GAIN ADJ.
L105 DOLBY FILTER
L205 DOLBY FILTER
UN 301 OSC BLOCK
S9 RECORD SWITCH
BIAS ADJ. P209 B-100K
P208 B-100K
P207 B-100K
BIAS ADJ. P109 B-100K
P108 B-100K
P107 B-100K
D301 RD6.8EB
D302 RD6.8EB
30V
TO CONTROL CIRCUIT
A
B
C
D

SCHEMATIC DIAGRAM (Control)


TO AMP CIRCUIT
A
B
C
D
Q305 2SC536
Q306 2SD794
SL1 SOLENOID
R328 22
C301 470μ 35V
R332 22K
R334 1.5K
D315 DS135
S10-2
C321 3.3μ 35V
30V
D308 WG1010A
Q305
Q306
R333 10K
D307 WG1010A
R342 150K
R329 15K
Q303
C325 4.7μ 16V
C320 10μ 10V
D310 RD2.7EB
R343 3.9K
Q304
R337 18
S8 ASF SWITCH
D306 WG1010A
D311 RD6.8EB
R335 33K
D309 WG1010A
C322 1μ 35V
R339 33K
R336 15K
Q303 Q304 2SC945
S6 MOTOR SWITCH
D317 SLP-137B (+6VU)
D318 SLP-137B (+3VU)
D319 SLP-137B (±0VU)
C324 220μ 25V
MOTOR
R310 1K
R309 1K
R308 1K
S10-1
Q310 2SC945
R313 82
C311 2.2μ 50V
R312 82
C310 2.2μ 50V
R311 82
C309 2.2μ 50V
R327 1K
D316 SLP-137B
(AUTO SEARCH)
R338 330 1W
C319 2200μ 25V
14V
D314 W02
F1 FUSE 500mA
T301 POWER TRANS
C313 0.047μ
C314 0.047μ
C1 0.01μ
S12 POWER SWITCH
120V
R324 22K
R307 1K
R318 5.6K
Q310
R316 3.9K
Q309
R314 2.7K
Q308
R319 330
R317 330
R315 330
Q308 2SC945
F2 FUSE 500mA
AC 120V/220V 50/60 Hz
Q307
Q307 2SC945
Q309 2SC945
R345 3.3 1W
R326 100 2W
C315 0.047μ
R304 18K
D304 1S188
C323 0.01μ
30V
Q302
C317 1000μ 50V
PL1 METER LAMP
C316 0.047μ
220V
R325 4.7
R340 1K
R302 120K
R301 10K
R341 100
16V
C302 100μ 25V
R303 47K
C303 100μ 10V
D303 WG1010A
Q301
C307 470μ 35V
D312 RD30EB
C318 470μ 35V
PL2 METER LAMP
D313 W02
S13 VOLTAGE SELECT SWITCH
S7 MUTING SWITCH
Q301 2SC945
Q302 2SD612

No.	Name	Position	No.	Name	Position	No.	Name	Position
S1	RECORD/PLAYBACK Switch	PLAYBACK	S6	DOLBY NR Switch	OFF	S11	TIMING Switch	OFF
S2	RECORD/PLAYBACK Switch	PLAYBACK	S7	REC. MUTE Switch	OFF	S12	POWER Switch	OFF
S3	BIAS Switch	Fe2O3	S8	MUTING Switch	CLOSE	S13	VOLTAGE SELECT Switch	220V
S4	EQ Switch	Fe2O3	S9	MOTOR Switch	OFF			
S5	INPUT SELECT Switch	MIC	S10	MOTOR RELEASE Switch	OFF			

PRODUCT SAFETY NOTICE

PRODUCT SAFETY SHOULD BE CONSIDERED WHEN A COMPONENT REPLACEMENT IS MADE IN ANY AREA OF AN UNIT. COMPONENTS INDICATED BY A MARK ⚠ IN THIS SCHEMATIC DIAGRAM SHOW COMPONENTS WHOSE VALUE HAS SPECIAL SIGNIFICANCE TO PRODUCT SAFETY. IT IS PARTICULARLY RECOMMENDED THAT ONLY PARTS SPECIFIED ON THE ATTACHED PARTS LIST BE USED FOR COMPONENT REPLACEMENT POINTED OUT BY THE MARK.

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Schönstraße 80, 8000 München 90
Telefon 089/23791

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